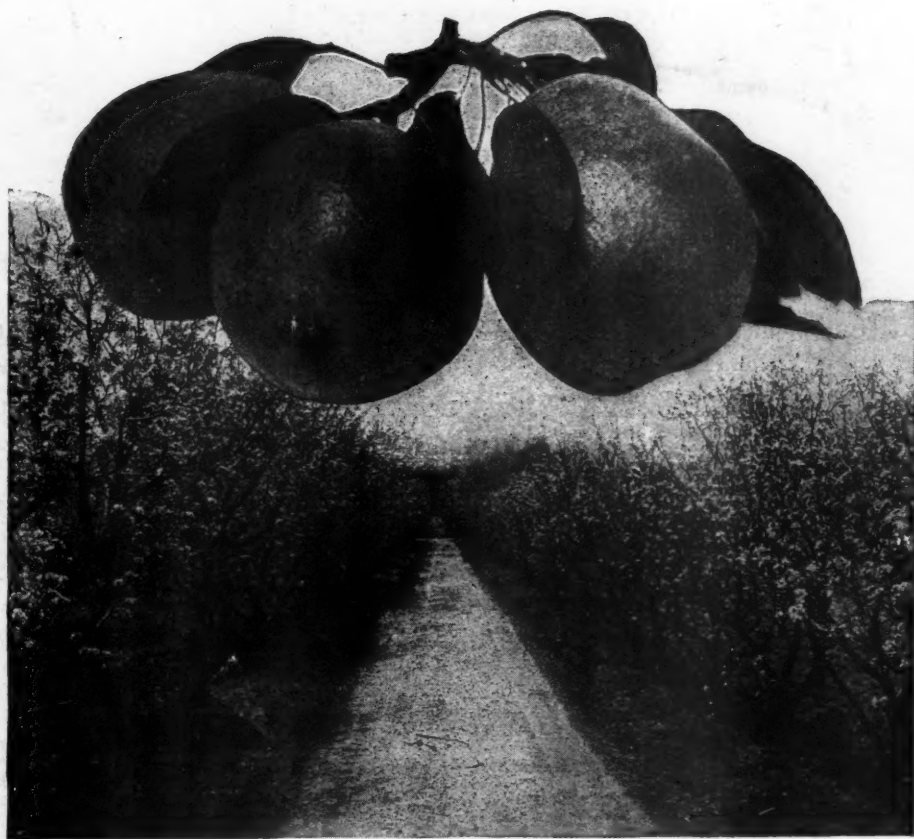


# GREEN'S FRUIT GROWER

Special Spray Issue



A MAGAZINE  
WITH A MISSION

FEBRUARY, 1914

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# GREEN'S FRUIT GROWER

## The Old Squire.

By Hugh Pendexter.

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The old squire gazed stolidly at the kitchen hearth, and elevated his boots above the oven door, but ventured no reply to his spinster sister's observation. She, a thin, disappointed-looking woman, the old squire's housekeeper, viciously ran a knife around a newly made pie, and repeated:

"I tell ye, Squire Tumley, no good ever come of tryin' to help Eliab Wheeven better himself."

Her brother—whom she always addressed by his title—attempted to mollify her without retreating from his position.

"Lurinda, I'll admit he strikes some as a worthless cuss, jest because he's unfortunate. If good luck, with a brass band, was gunning for him on the new State road, he'd miss meeting her, and wander off and fall down in front of a fast freight train. But it's my duty as a man and a neighbor to give him a lift when I can. In a way, he's a kind of a genius."

"Huh! I guess geniuses are like beets. Plant 'em too near together, an' ye git nothin' but greens. With Mose Tibbets inventin' churns, there ain't room for another genius in this neighborhood." Then as she waved him away and slid the pie into the oven: "He's onthankful, don't appreciate nothin', and is two-faced, or I miss my guess."

The old squire was always loyal—loyal even to every stray tramp he had ever fed.

"Why, Lurinda, there ain't enough venom in Eliab's whole body to embitter the nature of a wood-tick. He's all right. The post-office will pay him seven hundred dollars a year, and that will be clover to him. Yes, he must have it."

"Thought he was a Democrat," she sniffed sarcastically.

The old squire's blue eyes twinkled mischievously as they surveyed his vinegary relative, but his voice was grave as he explained:

"Eliab can't afford new clothes, but he's a regular dude when it comes to politics. New rig every year! But he's a Republican now; so it will be all regular. Remember what the Good Word says about fetching back the one stray sheep?"

"He's a muttonhead, certainly," she replied bitterly. "The idea of puttin' him in for postmaster when our minister's brother would like it! Guess the Bible don't say we shan't do nothin' for the ninety and nine."

"Ho, ho!" chuckled the squire. "So you and the elder and his brother have been playing politics, eh?"

"We ain't never favored a man because we was once foolish enough to be in love with the girl he married," she retorted.

"Tut, tut," he remonstrated shortly. "Dorcas Wheeven had lots of us chaps after her when we's young; but that's no reason why we should turn agin her husband now."

Yet the old squire's sister knew she had touched a tender spot by the way he stamped from the kitchen. She seldom reminded him of his boyish dreams. That was a grim pleasure to be saved for the more weighty occasions. In her innermost heart she had a great deal of admiration and crabbled affection for her brother, and ever since Eliab Wheeven won away his young sweetheart she had cherished a radical dislike for the successful suitor and his spouse.

With all her pessimism, she had measured Eliab almost correctly. Through all the years the old squire had helped his boyhood rival to earn a livelihood. Of late he had seen a worried look stealing into Wheeven's eyes, as one after another of the man's visionary prospects faded, and credit became hard to obtain. Although younger than the squire, Eliab was run down. He had stopped.

But he had played a final card. He asked Squire Tumley to get him the post-office appointment.

At first the squire hesitated. Eliab's political vagaries had made the thing well-nigh impossible. He had set both Republicans and Democrats against him. And it was not until he clinched his entreaty with "Dorcas would be so pleased," that the old squire relented and promised to do what he could.

He had made no open move in the matter when his sister upbraided him in the kitchen, and as he stamped from the room he appreciated more fully than ever the task before him. As the leader of the Republican organization in his town, it seemed almost treachery to his party even to propose it. Thus far he had been content to defeat his natural enemies, the Democrats, and ask nothing for himself. Now that he was to make his first requisition, his ruddy face turned, if possible, a deeper red, and a sneaking inclination to try diplomacy crept into his open soul.

By the time he had reached Tibbets' store, he had found the germ of an idea; and when Joshua Philbrick drew him aside, he began to think it might work.

"Squire," hoarsely whispered Mr. Philbrick, affectionately securing a finger-

hold in the squire's buttonhole, "I want the post-office. Stigley has had it two terms, an' don't need it longer."

"Wal, Josh, of course I can't be arbitrary," replied the squire solemnly. "The best thing for ye to do is to hustle around and git all the signers ye can. We caucus next week, and the man that can show most strength gets it. I think that Stigley ought to step aside now."

He did not call for his mail until he knew the small post-office would be cleared of the afternoon crowd. Then, true to his anticipation, Stigley pressed his face against the small grated window and whispered:

"I hear Philbrick is after the office."

The old squire, with a blush suffusing his ears, looked cautiously about and replied:

"He is; and he's showing some strength. Ye know, Stig, there are them that say ye've had it long enough."

"I don't keer a darn about the office; I can go back to my farm. But I hate like sin to see that man git it!" growled Stigley, slapping the squire's weekly paper under

"Of course, squire, you've got to give way some time," was his non-committal answer, after he had thoroughly absorbed the suggestion. "But we ain't fully decided on Eliab yet. I thought he was a Bryan man."

"He was," affirmed the squire, smiling inwardly at the other's use of the pronoun; "but he's a Republican now. Tried 'em all, and finds our party best."

This was also new food for reflection, and the postmaster looked a bit dubious as he replied:

"Well, anything to beat Philbrick. Are you going to be active in the fight?"

The old squire fidgeted a moment, and then suddenly saw the position to take without violating his conscience.

"No, I shall take no active part," he at last announced. "I'll be honest and admit I'd rather see Eliab git it than Philbrick—if he can show the proper strength. But Lawyer Fox will probably run the campaign. I'm gitting 'most too old, I guess. Anyway, I think I'll take a vacation."

An hour later Lawyer Fox was surprised

political strategy, and as he mused over what had been told him he saw the light full and strong.

"They'd beat you," he said. "Philbrick might not get it, but some one else would. And if you stick in the race I really think Philbrick would win. What did the squire say about Wheeven?"

"Oh, he said, he supposed you'd make the winning fight on him, as he's so neutral. Been in so many dickers no one knows where he does stand. Well, anything to beat Philbrick! He let my endorsement go to protest once."

Truth is, Eliab was the last man the young lawyer would have picked as a vehicle to draw him ahead of the machine; but here was the Stigley faction ready to accept Wheeven, and there would be some among the Democrats who would push him canvass. Verily, the old squire was a shrewd one. He had anticipated the situation perfectly.

"I think, Mr. Stigley, we'd better make a strong stand together and be sure of it. If we take Eliab, as I'd originally planned, there will be lots of other good things for you to choose from. There's the sheriff in two years, and the Legislature next year; meantime there are several smaller plumas, such as highway commissioner, superintendent of schools, and so on. Now, are you with me?"

The postmaster silently extended his hand, and a strong clasp cemented the inception of the new organization.

At about this time the old squire met Eliab near his home, and drawing him to one side, said:

"Eliab, I think ye'll git it. Only remember this—don't make a move yerself. Unless ye want to lose it, don't show yerself in the open. Better go fishing for a week. Remember, not a word, even to Dorcas!"

"Supper's been waitin' a hour," snapped Miss Tumley as her brother, with mouth drawn down a bit, entered the room with slow steps. "Where've ye been?"

"Up to the village," he replied gloomily. "I guess, Lurinda, ye won't b troubled with my being in politics after this I guess a new man will run the machine."

"Well, I never!" she ejaculated. For, although given to decrying her brother's activity in politics as being immoral, she could no more conceive of his abandoning his party leadership than of his losing his title of "the old squire." "Will the new man give the post-office to the elder's brother?"

"I don't think so," replied the squire, with a faint smile. "Both Philbrick and Stigley want it."

"Who'll git it? I hope I won't have to see that Philbrick's smug face every time I go to the office. And I'm tired of lookin' at Stigley and his squinty eyes. Why is it that they always pick out such men to read yer postal cards?"

"I don't know," he mumbled. "But the new man, Lawyer Fox, will fix all that."

The next day rumors began to creep lamely about, then to fly, that Squire Tumley had been ousted by the energetic newcomer. Stigley did not want the post-office again. Philbrick did. On the second day several other citizens discovered that they had as much right to the position as Philbrick had, and Mr. Fox received many callers. And each and every one of the prospective candidates left him declaring:

"Wal, if I can't have it, why should Philbrick? If we're to take a new start, let's not use any old timber. Philbrick has had all the town offices."

Before the week was out the new leader announced his position. He believed in giving the heretofore unrecognized a show. Under present conditions, with so many candidates and so many cross-purposes, he wanted all his friends to unite on the one available citizen, the one who had made no bid for the job—Eliab Wheeven.

(Continued Next Month.)

Mr. C. A. Green:—Will you please let me know at once which is the best fertilizer for peach trees? Will chicken manure spoil them? I was advised it would kill the trees and I do not like to run any risk. I have 500 peach trees planted.—Subscriber of C. A. Green's Fruit Journal, Pa.

Reply: Your letter intimates that you and many others seem to think that special fertilizers are necessary for the different fruits and the different crops, but this is a mistake. Barnyard manure, hen manure, commercial fertilizers, such as are used for ordinary farm crops, all of these are desirable fertilizers for the peach, pear, apple, plum, quince and cherry, and for all the small fruits, when used in reasonable amounts and properly spread over the surface of the ground as far as the roots or the branches of the trees extend. If stable or hen manure, or any other fertilizers are placed in contact with the roots of trees at the time they are planted, they may, and very likely will, injure or destroy the trees.

## Green's Fruit Grower

A Magazine With a Mission

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the grate. "Any one but him. He let a note I'd indorsed for him go to protest once."

"I don't think, Stig, ye could beat him out, man to man, as ye've had it eight years. Of course, if ye joined forces with a dark horse ye probably might," remarked the squire carelessly.

"Think so?" I vum, but that's what I've been thinking on myself," declared the postmaster, closing one eye with a world of cunning.

"O-ho!" murmured the old squire, closing one eye in return, but more slowly. "So ye're in the game, eh?"

"What game?" asked the postmaster, deeply puzzled and trying to hide it with a knowing leer.

"Why, this move to ring in Eliab Wheeven. Is it true that Lawyer Fox is backing him, and intends to oust me as leader of the organization?"

Several thoughts, new ones, lumbered laboriously through Stigley's slow mind at this suggestion. He had not heard that the young lawyer had ever avowed his intention of supplanting the squire; but it was quite likely, and if the old leader was to be deposed the postmaster did not intend that the falling pedestal should nip him. One thing he could not understand—why should Eliab be used in effecting the change?

and pleased to receive a visit from Postmaster Stigley. The postmaster's intelligence was fully in accord with the other's plans—plans that no one but the old squire had hitherto fathomed.

"I want a seat on your band wagon, Mr. Fox," the postmaster announced.

"What wagon?" the young lawyer inquired, mystified but hiding behind an ambiguous smile.

"Of, I know all about your ousting the old squire. We all know it. I like the old squire, but there ain't no sentiment in politics. A man never gets assaulted by prosperity unless he gets in line with the winners. Only I don't see why it wouldn't be better to make the fight on some one other than Wheeven."

The young lawyer peered intently into the bottom of his ink-well and began to suspect that he saw the truth.

"So you think you'd stand more of a chance than Wheeven, eh?" he said, and then asked himself: "Chance for what?"

"I kind of think so," slowly decided the postmaster. "Of course, as the old squire says, I've had the office for eight years, and there are lots in the party that want to see it passed around. But I don't think Philbrick is very strong."

At last it was out. Beneath his enigmatical smile the young lawyer had a great deal of respect for the old squire's



# GREEN'S FRUIT GROWER

A Monthly Magazine for the Fruit Growing Farmer and His Family

CHARLES A. GREEN, Editor

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Number 2

## HOW WE SPRAY OUR ORCHARD

A representative of Green's Fruit Grower asked Messrs. F. W. Clark & Son practical commercial orchardists, near Wyoming, N. Y., to give us in their own words the methods used in keeping their orchards clean and producing high class fruit. Here is the story as they gave it to us.

"Twenty years ago we never sprayed. In 1896, we had both quantity and quality of fruit, but in the last few years the price of apples has so advanced that now we think first of quality and only secondly of quantity. The only method to secure both of these is thorough spraying added to careful cultivation and pruning, and with the advent of the modern power sprayer, this is a comparatively simple matter.

"Our first spray is of course the dormant spray, which we always get at as soon as the ground is in condition to support a spray rig weighing fully two tons; usually about the tenth of April.

"We make our own lime-sulphur solution in ordinary open cooking kettles and have it average about 28 degrees Beaume on the Hydrometer scale. For the dormant spray we use it at the strength of about one to 10, figured on the basis of 32 degrees standard. To each fifty gallons of this solution we add about one-half pound of Arsenate of lead.

"We first used the dormant spray as a means of fighting the blister mite and now continue it for its generally beneficial effects. We received good proof of the value of this plan this last year in the case of a neighboring orchardist who gave his orchards the same care as usual except that he omitted the dormant spray, believing that since the orchards were apparently free from blister mite and small scale, it would not need the first application. When the crop came to maturity however, it was found to be far below its usual high standard of quality.

"The next spray which is applied while the trees are yet white with bloom and just after the first of the petals begin to fall, is to our minds the most important application. It is at this time that the orchardist must get his deadly enemy, the codling moth. For this we use 2½ pounds of the 20 per cent. lead to each fifty gallons of water, with lime-sulphur added as a fungicide, to the strength of one part lime-sulphur to thirty or forty of the original solution, the strength varying as to the lateness of the season and whether the application is for apples or smaller fruit. For pears, cherries, etc., it is not safe to use lime-sulphur solution stronger than about one to forty.

"This application is repeated from two to three weeks later or just before the calyx of the fruit entirely closes. The second application of this spray we have found necessary to secure the largest percentage of perfect fruit.

"For equipment the modern orchardist cannot afford to bother with anything short of a compact, powerful gasoline spray rig with tank capacity not less than 200 or preferably 250 gallons, equipped with the best high pressure ¾-inch hose. Every day's delay in spray time may result in a big loss at harvest time.

"We generally use from 175 to 200 pounds pressure and do so as much to facilitate the work as to force the spray into the calyx of the fruit. In an actual test last spring, with three leads of hose, each carrying two nozzles, our boys covered a tree 45 years old, capable of bearing 12 barrels of apples, using 10 gallons of solution, in one minute and a quarter, which included the time required to move to the next tree. We are usually able to put on a 250 gallon tank in 40 minutes. This does not include the filling of the

tank, but simply the actual time required to apply that amount of spray solution. Our work will average five or six tanks of solution a day while the spraying lasts and we can thoroughly cover about four acres of mature orchard per day. If we try to speed up beyond this, we do so at the risk of thoroughness.

"In buying a power sprayer, one of the most important points to observe is perfect agitation of the spray solution in the tank so that the last gallon of spray is just as strong and no stronger than the first put on. One secret of thoroughness is to have a uniform solution and then to cover each tree until it drips. It is not so much how many times one sprays as how well he sprays that counts.

"Now for results. About two years ago we bought an adjoining farm with a large acreage of apple and pear orchards, and have proven in this short time what wonderful results will follow careful, thorough spraying.

"The first year we did not treat the pear orchard for Psylla, but just gave it a thorough general spraying. We discovered

locality, who did not spray, the crop was practically a failure. We believe it pays to spray all right, but in this as in all other things, you have got to do a thorough job."

Note: It will be seen from the above that lime-sulphur and arsenate of lead form the sole spray materials used on these apple orchards. This makes the spray problem a comparatively simple matter and one which the average fruit grower can easily comprehend. The results indicated in the last two paragraphs are ample proof that the methods followed by Messrs. Clark & Son have been successful.

Orchard Hill Farm is Mr. Clark's old homestead, he being born there and having spent all but a very few years of his life there. Ever since Mr. Clark can remember, there have been orchards on the farm, and he has grown up with them and learned to know and care for them through a life long study of their conditions and needs.

The orchards on both farms produce about 70 varieties of fruit, 45 of them being apples and the remainder pears, plums, peaches and other small fruits. Baldwins, Spies and Russets are the principal winter apples with a fair amount of fall apples,

thus large quantities of oranges were allowed to decay or were given away in many instances.

The old method of distributing oranges was similar to that now used in selling apples, pears, grapes, strawberries and other fruits, which is for thousands upon thousands of different fruit growers in different parts of different states to send carloads of fruits promiscuously to different cities and states without knowing what other shippers were doing. Therefore by the old method it is possible for ten or twenty times as many carloads to be shipped to Chicago, Minneapolis, Philadelphia or Boston as that market can reasonably and naturally consume.

The new method is such that one master mind controls the entire shipment of oranges from the Pacific Coast to the East. This one man directs the disposal of each carload of every big train of California oranges going to the eastern cities. He has centers of distribution.

He instructs a certain number of carloads to be dropped at Denver, another lot of carloads of oranges to be dropped at Chicago, another at Buffalo, another at New York City, and other distributing points east, west, north and south. In

this way, a train of cars rushing eastward is lightened of its burden until when it reaches New York City, it has but a small portion of the number of cars that it started with.

Rochester gets from two to four carloads daily at the Buffalo distributing point. Other cities such as Syracuse, Utica, Binghamton, and Albany are allotted a certain number of carloads.

You can see that by this system instead of thousands of shippers shipping indiscriminately not knowing what others are doing, orange growers of the Pacific Coast may confidently expect that each city of the eastern and middle states is amply supplied, but not over supplied, daily with a reasonable amount of this delicious fruit, which is sold at reasonable prices and without loss in collections, since the master mind directing the affairs of the exchange is well informed in regard to the standing of the different dealers in various cities. Thus the total loss through bad debts for the past

year was only \$390.71 or less than .333 per cent. of the shipments from California. Think of this loss through bad debts of far less than one cent on the dollar as compared with the loss of fruit growers throughout the country, who send their fruits indiscriminately and often to fake concerns who make no remittance whatever.

In Florida there is a fruit exchange which handles citrus fruits of that state. I presume that it is managed on a similar plan to that of California. The growers of the fruit have nothing to do with the sorting or packing. They deliver the oranges, grape fruit and lemons to the central packing house where it is washed, sorted and packed uniformly. It is an acknowledged fact that this uniformity of grading and packing cannot be secured where individuals do this work.

The success of the Idaho and other western orchardists is largely owing to the fact that the growers of apples do not sort or pack their own fruit, but that it is done by skillful men who have no personal interest in putting in inferior fruit.

I have attempted in this article to set forth the advantages of organizations for the better distribution of apples, peaches, plums, pears and other northern fruits.

Although the last crop of California fruit was cut short by frost, it yielded, owing to the good management referred to, \$135,000,000, an average of \$2.75 per box.

The climate and conditions that are best for apples are best for man.



SPRAYING OLD HIGH TREES FOR SCALE.

later, however, that it was badly infected having been sprayed very little, if any, by the former owner. So this last year we drenched it early with a very strong solution of lime-sulphur and again a little later, thoroughly soaking it until every part of the trees were covered. In this way we checked the Psylla so that it did not show until very late. We do not feel however, that lime-sulphur alone will eradicate this pest and this season in addition to the lime-sulphur, we are going to use a strong tobacco decoction.

"The former owner had only made a bluff at spraying the apple orchard, so we went after it in earnest, using the same methods that had proven successful on the home orchards, and giving more than usual attention to thoroughness. At the end of two years, we feel that we have practically cleaned up the orchard and during this year, which was noted in sections for a prevalence of apple scab, we have had it well under control. The culture has increased the size of the foliage nearly one half and induced twig and leaf growth that has practically doubled the production of the orchard and tripled the quality of the fruit produced.

"If actual figures are more concrete evidence of the value of spraying, we might add that in 1912, we took 3,500 barrels of first quality fruit, from our 40 acres of orchard, besides about 3,000 bushels of evaporating stock, which we worked on the place in a modern power evaporating plant. This last year 1913, which was an off year for apples generally, we picked 2,800 barrels, while with others in the

such as Duchess and Wealthy. These few varieties are practically all that are raised on a large scale.

As a result of the care that has been given the orchards, fruit from Orchard Hill Farms has won many prizes at county fairs, at the New York State Fair, and several large expositions. An exhibit at the Toronto Industrial Exposition not only won prizes in competition with fruit from all over the United States and Canada, but also called forth many comments on the fine quality of the fruit exhibited. Orchard Hill Farm was also represented at both the Pan American Exposition and the St. Louis Exposition by a fine show of fruit, Messrs. Clark & Son receiving bronze medals from both expositions for the excellence of their fruit.

### A Marvelously Successful Distributors Exchange.

By C. A. Green.

We often hear reference made to the California Fruit Growers' Exchange which has so successfully handled the oranges and lemons of the Pacific Coast.

The name of this exchange is best known as The Orange Growers' Exchange. The success of this organization of fruit growers is the most notable of anything the writer can recall.

Only a few years ago before this new method of handling vast quantities of fruit was established, oranges and other citrus fruits were grown in California at a serious loss. It was found impossible to secure profitable markets for these fruits,



## Some Practical Suggestions in Spraying

Delivered by Prof. P. J. Parrott at the Meeting of the Western New York Horticultural Society, Rochester N. Y., January 30th, 1914

One who attends the various sessions of our State Fruitgrowers' Societies can hardly fail to be impressed by the conflicting opinions that prevail in many discussions as to best horticultural teachings, and by the difficulties that some members experience in forming satisfactory conclusions as to what are the most reliable practices for their individual circumstances. With no class of horticultural discussions are these conditions perhaps more noticeable than with that which deals with spraying to combat injurious insects and plant diseases. The reasons for the perplexities regarding methods for the most efficient control of insects are not hard to find. First of all there is a great deal of confusion because of the large numbers of insects that attack fruit trees and the varied details of the different kinds of insecticides. In meetings of this character, also, sufficient emphasis is sometimes not given to demonstrated facts as against those which have not been thoroughly tested by experience. Moreover, especially confusing to not a few growers are the reported successes with new and untried remedies, which are presented to public notice with most extravagant claims to lure the unwary and confiding growers from reliable practices into ways that are fraught with elements of danger. Because of the demand which always exists at these meetings, for practical information as to the protection of orchards from the inroads by insects, your Secretary has suggested that there is a real need in this program for brief and concise statements as to some of the approved spraying practices, which will guide fruit-growers in the orchard operations that not long hence will occupy their attention.

For the sake of convenience, if not clearness, the subjects as outlined will be discussed under the following headings:

- (1) The Lime-Sulphur Mixture in the Spraying Schedule.
- (2) The Employment of Lime-Sulphur to Combat the Scale.
- (3) Summer Spraying to Prevent Spotting of Apples by the Scale.
- (4) The Parasites of the San Jose Scale.
- (5) Spraying for Plant Lice on Bearing Apples.
- (6) Some Insects that Disfigure Fruits.
- (7) Susceptibility of Insects' Eggs to Spraying Mixtures.

### THE LIME-SULPHUR MIXTURE IN THE SPRAYING SCHEDULE.

If experience during the past ten years has demonstrated conclusively one fact as regards spraying it is the value of the lime-sulphur mixture for the treatment of fruit trees. Because of its combined insecticidal and fungicidal properties it is unsurpassed by any spraying mixture for the treatment of orchards either during the dormant season or up to the time that the buds begin to break and show green tissues at the ends. If properly timed and carefully directed the treatment during this period may be safely relied on to control the San Jose scale, the oyster-shell scale and the scurfy scale, to prevent the eggs of the pear psylla from hatching and to afford considerable, if not entire relief from losses by certain plant diseases. For the summer spraying of apples a dilute lime-sulphur mixture composed of one gallon of the concentrate testing 32 to 34° B. to forty gallons of water is preferred as the carrier of arsenate of lead to protect the trees from leaf and fruit-consuming insects. The spraying schedule so successfully followed by our most successful growers remains unchanged.

### EMPLOYMENT OF LIME-SULPHUR TO COMBAT THE SCALE.

Some more extended remarks should be made concerning the employment of lime-sulphur against the San Jose scale because its superiority for the treatment of this pest has been boldly challenged by the champions of other insecticides. The past two years have been characterized by considerable spotting of apples by the scale, which has not been so conspicuous on fruit since 1905. There has been as a result considerable complaint of the ineffectiveness of various spraying mixtures for the treatment of large apple trees, among which has been mentioned the lime-sulphur solution. To be sure, the lime-sulphur has one defect, viz., lack of spreading qualities, but this one fault is greatly offset by its safeness, low cost and by its combined insecticidal and fungicidal properties. No other spray has so many good points to counterbalance its weak features. Because the wash does not spread well, fruitgrowers experiencing difficulty in combating the scale satis-

factorily are urged to apply the spray in more liberal amounts and exercise more care in spraying. A common cause for failure, moreover, is too great a dilution of the stock material, which should be diluted according to its density. The proper strength is one gallon of the concentrate testing 32-34° B. to 8 or 9 gallons of water, while weaker mixtures should be diluted with proportionately less amounts of water. Some growers would find it profitable to spray their old apple orchards late in the fall as well as in the early spring, which practice should be continued until the pest is reduced to unimportant numbers and can be safely handled by the one treatment.

### SUMMER SPRAYING TO PREVENT SPOTTING OF APPLES BY THE SCALE.

As a general proposition not a great deal of reliance should be placed on summer spraying to combat the scale. Orchardists who have not completely controlled the pest by the spring treatment, and who desire to reduce the amount of breeding and check further spotting of the fruit, are advised to try a home-made oil emulsion which contains from ten to fifteen per cent. of kerosene or crude oil. In this event care should be exercised to make a stable emulsion, and in applying the spray pains should be taken to thoroughly wet the fruit, foliage and wood of the branches and limbs which show spotted fruit. Successive years' spraying with oil emulsions may prove injurious to the trees, for which reasons growers should be on the lookout for the first appearance of injuries. Such preparations as lime-sulphur or sodium-sulphur as ordinarily applied to the foliage have proven of very little value as summer sprays for this insect.

### THE PARASITES OF THE SAN JOSE SCALE.

In view of the wide interest in the subject, some mention should be made of the enemies of the San Jose scale. It is common knowledge that large numbers of injurious insects are annually destroyed by those which are predaceous upon them or which live parasitically within them. The San Jose scale is not an exception, for it is subject to the attacks of at least eight species of true parasites and a dozen or more predaceous ladybird beetles. Reports of the beneficial work of the enemies of this pest have raised the question of the capacities of the parasites to keep the scale in check and the extent to which an orchardist can safely utilize their services to simplify the problem of spraying. While parasites serve an important function, they have only in rare instances proven sufficiently effective as to render remedial measures unnecessary. They are generally capricious in their behavior, if not more so than the insect on which they subsist. A study of the parasites of the San Jose scale by the Geneva Station has shown that this pest during the past season has been subject to the attacks of probably not less than five species of internal parasites and two species of ladybird beetles,—the Black Ladybird Beetle and the Twice-Stubbed Ladybird Beetle. In an examination of sixty-two shipments of infested wood from twenty-three localities embracing thirteen counties, thirty-six per cent. was the highest rate of parasitism. The conditions of the different samples of wood in this respect were, however, exceedingly variable, differing with the localities from which the material was obtained, and even with samples taken from different portions of the same tree. It will be of interest to our fruit growers to know that the more important parasites of the San Jose scale are present in all of the important fruit-growing sections of New York, and, moreover, that there is no indication that orchardists can safely dispense with the usual spraying with lime-sulphur to control the scale.

### SPRAYING FOR PLANT LICE IN APPLE ORCHARDS.

Unlike last year, plant lice were not as a rule very abundant, and very little damage on the whole was done by them. At the time of the opening of the apple buds the grain aphid was quite numerous, but this species practically disappeared from apple orchards within two weeks after the blossoms fell. The green aphid made its appearance later in somewhat threatening numbers and influenced a few growers to resort to spraying. On account of the scarcity of lice the experimental operations about Albion and New Haven gave very little new data bearing on the question of the most practical means of fighting these pests in bearing apple orchards. One interesting point was, however, demonstrated by the season's endeavor—that it is possible by thorough spraying to destroy the lice on

the opening apple buds and thus prevent curling of the leaves. Pending experimental results, which will demonstrate what are the most efficient and economical methods of affording protection to the trees, our recommendations as to spraying for these pests stand as given in the past. Spray as soon as the lice appear in threatening numbers and before many of the leaves are curled and the blossom and leaf clusters are overrun with the predators. In spraying aim to kill every one of the insects. To accomplish the desired purpose apply the mixture with considerable pressure and in liberal quantities.

### SOME INSECTS THAT DISFIGURE FRUITS.

A good deal of interest has developed in recent years as regards the nature of the agents that are responsible for the disfigurement of fruit. The injuries are of varying intensity, ranging from stippling with red to the occurrence of pits, scars, corky areas and blemishes of one sort and another that may seriously affect the market value of apples and pears. Recent studies have shown that a number of species of insects as well as plant diseases are concerned in this nefarious work. Outside of the areas affected by the San Jose scale the reddish stippling of apples appears to be due in most cases to slight or superficial infections by a fungus, possibly to several species, although there is evidence also for believing that a similar discoloration may sometimes attend the puncturing of the epidermis of apples by such insects as plant lice or the apple-maggot fly. Pitted and misshapen apples in many orchards in western New York and the Hudson River Valley are the work of the red bugs (See Cornell Bul. 291). Large holes in young apples which in healing form brownish, corky patches or areas in the mature fruit are the result of the activities of various caterpillars known as leaf-rollers, green fruit worms and the palmer worm. A species of caterpillar known as the fruit-tree leaf-roller has in the capacity of an apple eating insect done much damage to the crops of some orchards (See Cornell Bul. 311 and Geneva Circular 25). The diseased condition of pear fruit, characterized by the cracking open of the skin in small spots and the formation of protruding granular areas, is the work of the false tarnished plant-bug. (See Geneva Circular 21 or Bulletin 368).

### SUSCEPTIBILITY OF INSECTS' EGGS TO SPRAYING MIXTURES.

In the past the notion has generally prevailed that the eggs of insects are quite, if not entirely, resistant to insecticides which can be safely employed for the treatment of fruit trees. Because of the apparent immunity of eggs to standard insecticides and the danger of injury to plant tissues by spraying mixtures, efforts to control orchard pests by the destruction of their eggs have as a rule met with slight encouragement. However, the increasing importance of certain species of insects and the great difficulties which are experienced to efficiently control them by existing methods have revived interest in the question of the susceptibility of insects' eggs to common spraying materials. Necessity, it is said, is the mother of invention. Because of the urgent need of relief from certain pests by some such method of control, more attention than ever before is being directed to this question in recent years. These efforts have in a number of instances been attended with some promising results and, while the advance in knowledge is not great, enough progress has been made to upset former ideas which usually prevailed with respect to this subject. Of especial interest to our growers in this connection are the experimental data dealing with the vulnerability of the eggs of the pear psylla, fruit-tree leaf-roller and apple aphides to lime-sulphur preparations and miscible oils, which are briefly summarized as follows:

**Effects of lime-sulphur on psylla eggs.**—No eggs of the various insects mentioned are as sensitive to treatment as are the eggs of the pear psylla. Strangely enough they are quite resistant to common oil emulsions and miscible oils, but those about to hatch, as well as the newly-emerged nymphs, are very susceptible to the lime-sulphur mixture. In this lies an important hint to the fruit-growers for an effective use of this spray against the psylla as well as the scale. The eggs of the psylla are laid principally during April and commence to hatch early in May, or when the cluster-buds are beginning to separate at the tips. Most growers spray much earlier than this for the San Jose scale, but by postponing the treatment of pear orchards until the blossom clusters are well advanced one may deal a very effective blow against the psylla, and with the same treatment combat the scale. The lime-sulphur solution testing 32-34° B., should be diluted in the proportion of one gallon to eight or nine gallons of water. The spray should be used in liberal quantities, and pains should be exercised to wet all portions of the tree, especially the fruit

spurs and undersides of the young wood where most of the eggs are laid.

**Effects of oil emulsions on eggs of the fruit-tree leaf-roller.**—There is much interest in this subject at the present time because of the sudden development of this insect as an important pest in several fruit-growing regions in the United States. Its formidable qualities were most impressively brought to the attention of many of our growers during the past summer by the appearance of great numbers of the caterpillars of this species in orchards about Hilton which worked great havoc to foliage and fruit, especially of apple trees. It has threatened to be a formidable pest to combat because of the unusual resistance of the caterpillars to arsenical poisons as commonly employed in the customary spraying schedule. Inability to afford efficient protection to bearing orchards by the application of poisons has focussed attention on the susceptibility of other stages of the insect to treatment. It has been discovered that this pest is most vulnerable in its egg stage. Fortunately the insect has only one brood a year and exists on trees in the egg stage from July to May, the eggs occurring as masses in exposed positions, principally on the smaller branches, twigs and fruit spurs. It is of much interest to note that the eggs of the leaf-roller, unlike those of the pear psylla, are not appreciably affected by lime-sulphur; but are quite susceptible to treatment with oil sprays, notably the commercial miscible oils. In experiments by Gill from 93 to 96 per cent. of the masses of this insect were destroyed by the latter preparations, using one gallon to fifteen gallons of water. These results were accomplished by applying the material just before buds burst. The spraying operations should be timed so that the treatment of the trees will be completed before buds have advanced so that the green tips are exposed. The above results open up a new field of inquiry and should lead to results of great interest and practical value.

**Effects of spraying mixtures on aphid eggs.**—The effects of various spraying mixtures on the eggs of plant lice have been for many years a mooted question. Recent experiments by the Station have shown that the application of whitewash, lime-sulphur mixture or oil emulsions to the eggs of this pest will materially reduce the numbers of the insects. On the whole the sulphur spray and various whitewashes have proven to be the most effective of the above insecticides. However, there is little question that spraying to kill aphid eggs is of doubtful utility. In spite of most thorough treatment a few eggs will survive and the insects on hatching will prove sufficient to stock the trees. These on account of their remarkable reproductive powers and ability to take advantage quickly of conditions favorable to them are sufficient to produce a serious infestation of trees. For these reasons a most thorough spraying of trees with tobacco extract and soap when the lice appear in threatening numbers and before the leaves are curled is recommended as the most satisfactory means for the prevention of injuries by these insects.

### Railroad Worm in Apples.

Editor Green's Fruit Grower:—Your letter of the 29th ult., addressed to the Department of Agriculture, has been referred to this Bureau for attention. The railroad worm, or apple maggot, (*Rhagoletis pomonella*), about which you inquire is a common pest throughout the New England States and New York, in some localities doing a considerable amount of damage. We have not carried out any extensive experiments in the control of the insect, and are, therefore, unable to give you definite means of control. The careful picking of windfalls from beneath the trees will be found to be of considerable help in protecting the fruit from injury. On the early varieties the windfalls should be picked up twice each week. On the later varieties once a week will be sufficient. The dropped apples that are collected should be destroyed by burning, cooking, making them into cider, or feeding them to stock. If the latter method is used care should be taken to see that the apples are all eaten. It is not safe to depend upon burying the apples for destroying the larvae which they contain, as adults will emerge from a foot or more beneath the surface of the soil.

The use of poison sprays is recommended by the Cornell Agricultural Experiment Station at Ithaca, N. Y. In their experiments there, they report this as a successful means of control. However, the same remedy has been tried by other Stations without success. As we have not tried this means of control, we are unable to advise you of the efficiency of this treatment.—A. L. Quaintance, In Charge, U. S. Deciduous-fruit Insect Investigations, Washington, D. C.

Note by C. A. Green: The name of the worm is probably given on account of its tunnelling the apple in various directions unlike other worms.



# How to Know the Insect Pests and Plant Diseases and How to Destroy Them

We are indebted to the Agricultural College of Cornell University for much of the valuable information in the following article, and would suggest that our subscribers keep it for future reference.

## Things to be Remembered.

For nearly all fungous diseases spray before rains, not after. When spraying for insect pests alone, apply the mixture after rains. Spray thoroughly. Every leaf and fruit must be coated in order to be protected. Timeliness and thoroughness are more important factors in the control of diseases and insect pests than are the particular mixtures of poisons used.

Chewing insects are usually controlled by applying to their food poisons such as paris green, arsenate of lead, or hellebore. Sucking insects cannot be reached in this way and must be killed by a direct application of contact insecticides such as soaps, oils, or other substances. In fighting sucking insects thorough and skillful work is required, since every individual insect must be hit by the spray; while in the case of chewing insects, it is merely necessary to apply the poison thoroughly to the food-plant.

When solutions such as 5-5-50 are specified the first two numbers represent the proportion of the chemicals used and the last number represents the amount of water. For instance Bordeaux 5-5-50 means 5 pounds copper sulfate, 5 pounds stone lime and 50 gallons water.

There are now on the market several concentrated tobacco extracts, referred to in this article as black leaf.

Black Leaf is also obtained by steeping (not boiling) one pound of tobacco stems in two gallons of water for one hour in a covered vessel. Strain and apply in proportions as given in directions for its use.

## APPLE.

**Bud Moth.**—The small brown caterpillars with a black head devour the tender leaves and flowers of the opening buds in early spring. Make two applications of 4 lbs. arsenate of lead in 100 gal. water; the first when the leaf tips appear and the second just before the blossoms open. In cases where lime-sulphur is used just before the buds open for scale or blister mite, arsenate of lead, 4 pounds to 100 gallons, may be added and will help to control the bud moth.

**Cankerworm.**—These caterpillars are small measuring worms, or loopers, which defoliate the trees in May and June. The female moths are wingless and in late fall or early spring crawl up the trunks of the trees to lay their eggs on the branches. Spray thoroughly once or twice, before the blossoms open, with 4 lbs. arsenate of lead in 100 gallons water. Repeat the application after the blossoms fall. Band the trees with tanglefoot to prevent the wingless females from climbing.

**Codling Moth.**—This is the pinkish caterpillar that causes a large proportion of wormy apples. The eggs are laid by a small moth on the leaves and skin of the fruit. Most of the caterpillars enter the apple at the blossom end. When the petals fall the calyx is open and this is the time to spray. The calyx soon closes and keeps the poison inside ready for the young caterpillar's first meal. After the calyx has closed, it is too late to spray effectively. The caterpillars become full-grown in July and August, leave the fruit, crawl down on the trunk, and there most of them spin cocoons under the loose bark. In most parts of the country there are two broods annually.

Immediately after the blossoms fall, spray with 4 lbs. arsenate of lead in 100 gal. water. Repeat the application about three weeks later. For use with Bordeaux and lime-sulphur, see APPLE SCAB. Cornell University Agricultural Experiment Station Bulletin 142.

**Apple Maggot.**—The small white maggots make brownish, winding burrows in the flesh of the fruit, particularly in summer and early fall varieties. When full-grown the maggot leaves the fruit, passes into the ground, and finally transforms into a fly. The fly is constantly sucking material from the surface of the apples. The flies may be poisoned by applying a mixture of 2½ lbs. arsenate of lead to 50 gal. water sweetened with 1½ gal. cheap syrup. The mixture should be applied to the trees in a fine mist spray between June 15 and July 1, and again in ten days. If rains wash the liquid from the trees, another application should be made. Clean cultivation is recommended.

**San Jose Scale.**—This scale is nearly circular in outline and about the size of a pinhead. When abundant it forms a crust on the branches and causes small red spots on the fruit. It multiplies with

marvelous rapidity, there being three or four broods annually, and each mother scale may give birth to several hundred young. The young are born alive and breeding continues until late autumn, when all stages are killed by the cold weather except the tiny, half-grown, black scales, many of which hibernate safely.

Spray thoroughly in the fall after the leaves drop, or early in the spring before growth begins, with lime-sulphur wash. When badly infested make two applications, one in the fall and another in the spring. In case of large old trees, 25 per cent. crude oil emulsion should be applied just as the buds are swelling. Geneva N. Y., bulletins 262, 296, 320, and Circular 9.

**Oyster-shell scale.**—This is an elongate scale, one-eighth inch in length, resembling an oyster shell in shape and often encrusting the bark. Spray as recommended for San Jose scale.

**Scurfy scale.**—This whitish, pear-shaped scale, about one-eighth inch in length, often encrusts the bark, giving it a scurfy appearance. Spray as recommended for San Jose scale.

**Leaf blister-mite.**—The presence of this minute mite is indicated by small, irregular, brownish blisters on the leaves. Spray in late fall or early spring with the homemade lime-sulphur or with the concentrated lime-sulphur solutions, 1 gallon in 10 gallons water. Geneva Bulletin 306.

**Round-headed borer.**—The only practicable method of control is to dig out the borers or kill them with a wire.

**Apple tent-caterpillar.**—The insect hibernates in the egg state. The eggs are glued in ring-like, brownish masses around the smaller twigs, where they may be easily found and destroyed. The caterpillars appear in early spring, devour the tender leaves, and build unsightly nests on the smaller branches. This pest is usually controlled by the treatment recommended for the codling moth. Destroy the nests by wiping out when small.

**Scab.**—Commonly known among growers as "the fungus." Attacks both leaf and fruit, usually most evident on the fruit. Spray with lime-sulphur, 1-40 or with bordeaux 3-3-50: first, just before the blossoms open; second, just as the petals fall; third, ten to fourteen days after the petals fall. In most seasons the second spraying seems to be the most important. Spray thoroughly.

**Fire blight.**—This is the same as pear blight. It usually makes itself manifest on the apple trees in three forms, blossom blight, twig blight, and blight cankers on limbs and body. It is caused by bacteria that are distributed by bees and flies, and is not controlled by spraying. Cutting out and destroying the diseased parts are the chief measures to be taken. Make a systematic inspection of the trees one to three times a week during the growing season, cutting out all blighted twigs and disinfecting the cuts as described below. The bacteria of this disease are carried over winter in cankers on the main limbs and bodies of the trees. Remove all such cankers with a sharp knife, cutting well into the healthy bark, and wash the wound with corrosive sublimate, 1 part to 1,000 parts of water. Then paint the wound with gas tar or lead paint. Destroy or clean up all old pear and apple trees about the premises because such trees harbor the disease.

**Apple-tree canker.**—This important fungous disease should not be confused with the "blight canker." Cankers are usually found on the main limbs of old trees, black and rough. This canker is very common on Twenty Ounce. Since the fungus enters through wounds, avoid breaking the bark. All wounds made in pruning should be promptly painted over. Cut out cankers and treat as for "blight canker." Spray early in spring, before the buds start, with lime-sulphur 1-12 or bordeaux 10-10-50; soak the body and the limbs when making first application for scab. Geneva bulletins 163 and 185.

## CHERRY.

**Black knot.**—A fungus, the spores of which are carried from tree to tree by the wind, is the cause of this disease. The same fungus also affects plums. Cut out and burn all knots before leaves appear in the spring. See that the knots are removed from all plum and cherry trees in the neighborhood. Cornell Bulletin 81.

**Brown rot of fruit.**—Produced by the same fungus that causes the brown rot of plums and peaches. See Brown Rot of peaches.

**Leaf spot.**—This is a fungous disease in which the leaves become thickly covered with reddish or brown spots and fall prematurely; badly affected trees winterkill. Often, the dead spots drop out, leaving

clear-cut holes. Spray with lime-sulphur, 1-40 (32° Beaumé), or bordeaux, 5-5-50. Make four applications: first, just before blossoms open; second, when fruit is free from calyx; third, two weeks later; fourth, two weeks after third.

**Powdery mildew.**—It attacks leaves at the tip of the growing shoots and is often serious on nursery stock. The leaves curl and show white mealy growth of the fungus. Dust heavily with sulphur or spray with potassium sulphid, 1 oz. to 3 gallons water, or with lime-sulphur as for leaf spot.

**Aphis.**—Early in the season these dark brown plant lice curl the terminal leaves, especially of sweet cherries. Spray with kerosene emulsion diluted with 6 parts of water, or with one of the tobacco extracts. Repeat the application if necessary.

## CURRENT AND GOOSEBERRY.

**Curran worm.**—In the spring the small, green, black-spotted larvae feed on the foliage, beginning their work on the lower leaves. A second brood occurs in early summer. When worms first appear, spray with 1 lb. paris green or 4 lbs. arsenate of lead in 100 gallons water. Ordinarily the poison should be combined with bordeaux. After fruit is half grown, use hellebore.

**Cane blight or wilt.**—Very destructive in the Hudson Valley. Canes die suddenly while loaded with fruit and leaves, as do those attacked by the cane borer. Caused by a fungus that kills the bark in places and discolors the wood. No definite line of treatment has been established, but the following is suggested: beginning when the plants are small, go over the plantation three or four times every summer and cut out and burn all canes showing signs of disease.

**Leaf spot and anthracnose.**—This is caused by two or three different fungi. The leaves become spotted, turn yellow, and fall prematurely. It may be controlled by three to five sprayings with bordeaux, 5-5-50, but it is doubtful whether the disease is sufficiently destructive on the average to warrant so much expense. On the first appearance of curran worms, spray with bordeaux and paris green, 1 lb. to 100 gal., or with arsenate of lead, 4 lbs. to 100 gal. Repeat if a second brood of worms appears.

## GRAPE.

**Flea beetle, or "Steely beetle."**—The small, shining blue beetles appear in early spring and eat into the opening buds. The brown larvae feed on the leaves in May and June. When buds begin to swell, cover them thoroughly with arsenate of lead, 8 lbs. in 100 gal. water, or when beetles appear, hand-pick them into a pan containing a little kerosene. To kill the larvae on the leaves from May 15 to July 1, add 1 lb. paris green or 4 lbs. arsenate of lead to every 100 gal. bordeaux mixture.

**Leaf hopper.**—The small yellowish leaf-hoppers, erroneously called "thrips," suck the sap from the undersides of the leaves, causing them to turn brown and dry up. Spray the underside of the leaves very thoroughly with Black-leaf 40, 1 gal. in 1,500 or 1,600 gal. water, about July 1, to kill the young leaf-hoppers. Repeat the application in a week or ten days.

## PEACH.

**Brown rot.**—This is the most serious fungous disease of stone fruits in this State and one of the most difficult to control. Plant resistant varieties. Prune the trees so as to let in sunlight and air. Thin the fruit well. Spray with self-boiled lime-sulphur, 8-8-50, to which add 2 lbs. arsenate of lead to 50 gal. Spray first, about the time shucks are shedding from young fruit; second, two to three weeks after first, using same combinations as for first; third, about one month before fruit ripens, with self-boiled lime-sulphur, 8-8-50, omitting the poison.

**Black spot or scab.**—This often proves troublesome in wet seasons and particularly in damp or sheltered situations. While this disease attacks the twigs and leaves, it is most conspicuous and injurious on the fruit, where it appears as dark spots or blotches. In severe attacks, the fruit cracks. In the treatment of this disease it is of prime importance to secure a free circulation of air about the fruit. Accomplish this by avoiding low sites, by pruning, and by removal of wind-breaks. Spray with self-boiled lime-sulphur, 8-8-50, applying at same time as for brown rot.

**Leaf curl.**—This is a fungous disease in which the leaves become swollen and distorted in spring, and drop during June and July. Elberta is an especially susceptible variety. Easily and completely controlled by spraying the trees once, before the buds swell, with bordeaux, 5-5-50, or with the lime-sulphur mixtures used for San Jose scale.

**Yellowa.**—Yellowa is a so-called "physiological disease." Cause unknown. Contagious and quite serious in some localities. Known by the premature ripening of the fruit, by red streaks and spots in the fruit flesh, and by the peculiar

clusters of sickly, yellowish shoots that appear on the limbs here and there. Eradication is the only means of control. Dig out and burn diseased trees as soon as discovered.

**Peach borer.**—The adult is a clearwing moth. The larva burrows just under the bark near or beneath the surface of the ground; its presence is indicated by a gummy mass at the base of the tree. Dig out the borers in June and mound up the trees. At the same time apply gas tar or coal tar to the trunk from the roots up to a foot or more above the surface of the ground.

**Plum curculio.**—See under PLUM.

**San Jose scale.**—See under APPLE.

## PEAR.

**Pear psylla.**—These minute, yellowish, flat-bodied, sucking insects are often found working in the axils of the leaves and fruit early in the season. They develop into minute, jumping-lice. The young psyllas secrete a large quantity of honeydew in which a peculiar black fungus grows, giving the bark a characteristic sooty appearance. There may be four broods annually and the trees are often seriously injured. Spray for the adult psyllas, during a warm spell in December or March, with Black-leaf-40, three-fourths of a pint to 100 gal. water with 5 lbs. whale-oil soap added. Spray for the eggs just before blossom clusters open, with lime-sulphur at scale strengths. Spray for the young psyllas after blossoms fall with Black-leaf-40, three-fourths of a pint to 100 gal. water with 5 lbs. soap added. Repeat if necessary. Cornell Bulletin 108.

**Scab.**—Scab is a fungous disease very similar to apple scab, but it is not the same. Spray three times with lime-sulphur, 1-50 (32° Beaumé) or bordeaux 3-3-50 as for apple scab.

**Black Knot.**—See under CHERRY.

**Leaf spot.**—See under CHERRY.

**Brown rot.**—See under PEACH.

**Leaf blister-mite.**—See under APPLE.

On pears, the lime-sulphur wash has also been found effective.

**Pear slug.**—These small, slimy, slug-like, dark green larvae skeletonize the leaves in June. A second brood appears in August. Spray thoroughly with 4 lbs. arsenate of lead in 100 gal. water.

**San Jose scale.**—See under APPLE.

**Codling moth.**—See under APPLE.

**Fire blight.**—See under APPLE.

## PLUM AND PRUNE.

**Plum curculio.**—The adult is a small snout-beetle that inserts its eggs under the skin of the fruit and then makes a characteristic crescent-shaped cut beneath it. The grub feeds within the fruit and causes it to drop. When full-grown it enters the ground, changing in late summer to the beetle, which finally goes into hibernation in sheltered places. Spray just after blossoms fall with arsenate of lead, 6 to 8 lbs. in 100 gal. water, and repeat the application in about a week. See quince curculio. Same treatment is effective for plum curculio.

(Continued on Page 7.)

Many first-class nurseries are now selling direct to the planter, which is a move in the right direction, because it allows the one who wishes to plant to use his own judgment in making a selection.

## WONDERED WHY

Found the Answer Was "Coffee,"

Many pale, sickly persons wonder for years why they have to suffer so, and eventually discover that the drug—caffeine—in coffee is the main cause of the trouble.

"I was always very fond of coffee and drank it every day. I never had much flesh and often wondered why I was always so pale, thin and weak.

"About five years ago my health completely broke down and I was confined to my bed. My stomach was in such condition that I could hardly take sufficient nourishment to sustain life.

"During this time I was drinking coffee, didn't think I could do without it.

"After awhile I came to the conclusion that coffee was hurting me, and decided to give it up and try Postum. When it was made right—dark and rich—I soon became very fond of it.

"In one week I began to feel better. I could eat more and sleep better. My sick headaches were less frequent, and within five months I looked and felt like a new being, headache spells entirely gone.

"My health continued to improve and today I am well and strong, weigh 148 lbs. I attribute my present health to the life-giving qualities of Postum."

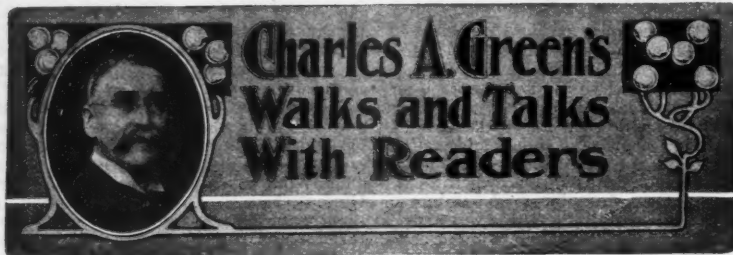
Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville," in pkgs.

Postum now comes in two forms:

**Regular Postum**—must be well boiled. **Instant Postum**—is a soluble powder. A teaspoonful dissolves quickly in a cup of hot water and, with cream and sugar, makes a delicious beverage instantly. Grocers sell both kinds.

"There's a Reason" for Postum.





"Think nothing done while aught remains to do" said Napoleon.

ROCHESTER, N. Y., FEBRUARY, 1914

### The Aristocratic Oak.

I am a monarch, the king of the trees;  
Calmly I rise, and spread by slow degrees;  
Three centuries I grow; and there I stay  
Supreme in state; and in three more decay.  
—Dryden.

On my home lot at Rochester, is an old oak tree. As I look out of my office window, this beautiful object with its gnarled and knotty arms stands out boldly against the autumn sky. While the other trees have lost their foliage, the oak retains its leaves sometimes all winter, making it a striking object in the landscape.

In driving about one of our beautiful Rochester parks yesterday, where there are perhaps 10,000 forest trees growing, I could easily pick out the oaks as they were the only ones retaining their foliage. The oak is an emblem of strength. On my father's farm where I was born and where I spent my happy days, there were in the woodlands many marvelous oak trees. Some of them seemed to be 300 or 400 feet in height and 4 feet through the trunk, with no branches except at the very top. Think of the strength of such oak trees, standing as they did for centuries buffeted by the autumn and winter hurricanes. On these tall gladiators of the forest, the wild pigeon, crow and hawk often perched on the uppermost branches. I have often picked game birds and squirrels off from the tall branches of these great trees in the days when I took delight in slaughter, before I realized the value of life as I do now.

It is a pity that the oak tree in common with other nut trees is difficult to transplant, owing to the fact that its roots are large, coarse and wide-spreading. I have found the chestnut the easiest of all trees to transplant. The timber of the oak is long enduring. There are many varieties of oak, the white oak being considered one of the most valuable.

When I go back to the scenes of my childhood I find many changes in the woodlands, but I recognize the oak trees that were familiar to me in days gone by. Many of the other trees have disappeared with the swing of the axe or the tooth of decay, but the oak rears its head as a monument which time finds it difficult to destroy.

### The Wealthy Apple.

This beautiful apple is growing in popularity each year. Entering one of our largest and best equipped fancy groceries last fall, I saw hundreds of peach baskets filled with attractive apples which I did not recognize. On inquiry I was told that they were the Wealthy, though they did not possess the bright coloring that I have been accustomed to see on the Wealthy apple. I was told that there was a large demand for these beautiful apples which were selling at a fancy price. In addition to its size and beauty, an attractive feature is that it is a hardy apple, succeeding farther to the north and enduring more severe winters than the Baldwin, Greening and other varieties of that class. While not of the highest quality, Wealthy is an apple that gives general satisfaction. It is a productive variety, the fruit is uniformly large and fair. It may be classed as an early winter or late fall variety.

### What I would Do If I Had to Live My Life Over Again.

Here is a question often asked and considered. Many have answered it by saying that in case they had to live their lives over again, they would not vary their way of living very much, that they would do pretty much as they had done. My answer is that if I had to live my life over again I would endeavor to appreciate to the fullest extent the wonderful things that may be accomplished if any well developed, energetic and accomplished individual should set out working toward one object in early life and continue at it until old age. It seems to me that there are few who could fail of accomplishing great things if they would begin thus early in life and continue persistently to the end. But sad to relate how few there are who pursue steadfastly, such a course as this. Most people in youth have no definite plans for the future. They move along the lines of least resistance, doing the things that bring results in the easiest way, now devoting their time and talents

to one enterprise and tomorrow to another, and next week to another, and next season to still another, now located in one town, later in other, and in a few years to be found in a distant state, wasting time with every move and getting no nearer to the desired goal.

### The Family A National Asset.

Years ago when I was on a fishing excursion in a rough and rugged country far away from human habitation, I found to my surprise, a dwelling and a family consisting of father, mother and a bevy of children, both boys and girls. Here was a modest community making no pretensions of being important to the welfare of the state or nation, and yet the longer I dwelt upon the subject, the more I became convinced that there is no family so poor or so humble, but that this family is of importance to its community, to the state, and to the country of which it is a part. The ties of husband and wife, father and mother, as well as those of the children are sacred; they are even more than this, for they are absolutely essential in the maintenance of law and order and for the survival of the race. Let therefore every man and woman who have joined hands in the establishing of a home and a family feel the dignity of their intention. Make your home as attractive as it can be without extravagance. Do not envy those who have more money and who make a great display of gewgaw goods, of carriages, automobiles, of jewels or dress. Be satisfied to feel in your inner consciousness that if you have established a family and a home, you are in a certain sense the equal of your wealthy neighbor or friend.

### Lifting Water to Elevated Sites in Farm Houses and Barns.

How to lift the water from a running brook or spring up hill and into the upper rooms of your house or other buildings on the farm, is an important question.

When I was a boy on the farm, my father placed a hydraulic ram a few feet below a permanent spring. This ram was a simple structure costing but a trifling sum. It was propelled by the water from the spring and forced the water in a small lead pipe up hill a distance of nearly a quarter of a mile to the house and barns. This was a very small sized ram and threw but a small stream, the supply pipe being not over one-half inch in diameter on the outside, but it furnished a sufficient supply. I would advise a larger sized ram for most farms.

Of late years, hydraulic rams have been greatly improved and enlarged. This ram is now the most economical way of raising water, provided you have a good supply of water and a good fall. The incline from the source of the water supply is absolutely necessary.

A more expensive way of raising water is by the windmill. A still more expensive method is with the gasoline engine. Irrigation is now conducted near Rochester, N. Y., by gasoline engines. They are made of various sizes, some of which are large enough to throw a very large stream of water.

### Selling His Farm Little by Little.

When I see farmers bringing into Rochester, great loads of hay, straw, wheat, oats, potatoes and corn, I feel like asking, do these men know that they are selling their farms by piece meal when they are bringing these crops to the Rochester market? No, probably they do not realize. But as the average farm is managed, it is being sold month by month and year by year in the crops which are borne to market. Every load of hay and every load of grain takes away from the land a certain amount of fertility, leaving the land a little poorer, yet the farmer is surprised to find that his land does not yield as large crops as formerly. Often he assumes that there is trouble with the seasons, that there is not enough moisture or warm weather, whereas the trouble is, he has previously sold his farm to the man who bought his hay, straw, his wheat, corn and his oats, and that he really has left simply the shell of his former productive acres.

If a farmer grows apples, pears, grapes, berries or currants, when he comes to market, he carries products that are 80 to 90 per cent. water, therefore, he is not

greatly reducing the fertility of his land in selling fruits. Oranges are 98 per cent. water. Fruits are not so exhaustive as are other farm crops. Fruit trees feed upon the sub soil which the ordinary farm crops cannot reach.

### York Imperial Apple.

I have just eaten a York Imperial. Its color is a beautiful deep red, almost crimson. It is attractive in shape. It is beautiful enough to embellish any fruit stand. It is of good fair size, not over large. In size it is about with the Baldwin. I find it ripe enough to eat December 6th. It is not quite so juicy or high-toned in flavor as the Spy, but is nevertheless good eating. I am somewhat critical of the quality of apples, but I enjoy eating this York Imperial. This beautiful variety originated in Pennsylvania. The fact that Pennsylvania fruit growers and farmers are continually planting more of this variety is an indication of its popularity in the Keystone state.

Mr. D. C. Kauffman of York, Pa., writes us that he has 200 bushels of York Imperial apples yet for sale. A neighbor of his has about 600 bushels for sale. We have no interest in giving the names of these apple growers further than they are subscribers of this publication and we feel interested in the success of all of our readers. A fair price for these apples in bushel boxes is \$2.00 per box, or in barrels at \$3.50 per barrel, the buyer to pay freight.

### What to Do With Overgrown Flowering Shrubs.

Having recently purchased additional land to my city home, I find growing thereon flowering shrubs, such as lilacs, spiraea, deutzia, mock orange and snowball, which have received no pruning or cutting back for many years. If these bushes had been headed back a little each year, by cutting six inches or a foot off the ends of the shoots, and thinning out some of the superfluous shoots, the bushes would not now be more than one-third of their present height and would be more attractive.

I find that some of these shrubs are standing 10 feet high. If these shrubs were intended to hide an objectionable view, I would not cut them back, but as they are intended simply for ornaments on the lawn, I have this morning cut more than one-half of the length of each branch off of these flowering shrubs. Some times I have cut off all growth of such shrubs close to the ground, where I have desired low growing shrubs in place of those growing tall. I have never failed to secure a handsome shaped bush from these shrubs that have been cut back closely, as new shoots have invariably come up to take the place of the old ones that have been removed.

The effect of cutting back old shrubs closely is similar to that of dehorning peach trees or other fruit trees. It seems to renew the life of the shrubs and causes them to bloom profusely. The ordinary pruning of flowering shrubs consists in cutting out a portion of the old wood each year and in cutting back the new shoots to a reasonable length. But remember that there are some shrubs, like Golden Bell, which should not be pruned until after they have blossomed in the spring; for if you cut off the ends of the shoots before blossoming, you cut off the blossoms that would have appeared in the present season.

### It is And It is Not.

How often individuals and communities and the world at large are divided in opinions on important subjects. One individual or one group says it is so, the other says it is not so. In many instances the house is about equally divided between those who think one way and those who think another way on the same subject. This should teach us that we are all liable to be radical and that the average of opinion is more reliable than the extreme position of either side. The differences of opinion in politics and religion are the most difficult to be harmonized owing to the fact that we do not come into our opinions on these two subjects from reason or long thought, but from birth, since we inherit opinions on religion and on politics.

The older and wiser we grow the more liberal should be our views and the greater the concessions we should make for those who think differently than we do.

How many different opinions there are about dress and the exposure of any parts of the body other than those of the hands and face; and of art, music, the rights and privileges of neighbors, what constitutes good form in society, and a thousand and one other similar affairs. Think of the disputes of past periods concerning church affairs. I have recently been reading a book made up of the views of many hundreds of the brightest men who have ever lived on the subject of Christ, the church and religion. When I sum up the slight differences of opinion of the world's brightest minds, I can almost say that there is not enough of difference in their views to warrant being more than one church and one religion.

### Doing Without.

Most people buy many things that they do not need. Some things are bought because they are cheap, while others are bought for the pleasure of buying and the pleasure of possessing. Emperor William of Germany has several hundred suits of clothes—I think the number is 600. Considerable room is necessary for the storage of these garments and many people are required to keep them in order. You and I, who have far less clothes are troubled with moths. Think of the difficulty in keeping 600 suits of clothes free from greedy moths.

I know of a man of considerable wealth who left home for a trip of months, with only one suit of clothes, which must have given him considerable relief, for the packing and caring for clothing in traveling is a burden.

When I left the city, I moved out on a farm. I was surprised to find the same amount of money in my pocket Saturday night that I placed there the week before. On the farm I had not been tempted to buy little things here and there which seriously reduces the amount of coins in our pocket books.

We can do without a large portion of the food which we consume. Most people eat too much. We often have too large a variety of food upon our tables. Our stomachs can more easily digest a simple meal of bread and milk, baked potato and codfish, than they can a multitude of foods such as we would get at a banquet.

Traveling is considered by many a necessity, but no one enjoys himself so much while traveling as he does at home. Those who are able to go south in the winter, or to visit Europe in summer are considered fortunate, but the fact is that they are not so comfortable as they would have been had they remained at home.

### A New Thought on Apple Tree Pruning.

I would like to call the attention of my readers to a recent article describing a western orchard. The writer noticed that whereas the leading shoots of large branches were cut off in pruning many little shoots along the body of the large limbs down within four or five feet of the trunk were filled more fully than common with little branches which had been transformed into fruit buds, thus a considerable portion of the fruit on the trees thus pruned was borne on shoots that most orchardists would consider sucker shoots and would remove with haste. But in this orchard these adventurous shoots along the bodies of the large bearing branches were heavily laden with large and beautiful specimens of apples. The advantage of having the fruit borne thus low on the big limbs is that the limbs can more easily carry the load of fruit on the lower part than they can at the extremities, and that the addition of these shoots gives more space for fruitfulness.

One reason why I call attention to this seemingly new method is that most eastern orchardists take pride in keeping the lower parts of the main bearing branches free and clear from all shoots. In these eastern orchards not only are the sucker shoots cut off, but the fruit sprouts that occur on the lower parts of these large branches. While I would not in all cases leave on all of the shoots on the lower parts of these bearing branches, I would leave at least a few of the shoots that appear to be sucker shoots, provided they were not so low down as to prevent convenient access to the tree in picking. I do not doubt that many experienced pruners cut off many valuable fruit spurs which if left on the lower parts of the bearing branches would add materially to the productiveness of the trees.

### Jewel Bearing Trees.

Probably you have never seen a tree bearing jewels, but I have seen trees bearing fruits that looked as beautiful as jewels, and which are figuratively speaking as beautiful as jewels. Cherry trees might be called jewel bearing trees, as may also quince trees and some of the apple, pear and peach trees. I have seen jewels worn by fashionable women that cost over \$100,000 which did not seem to me to be as beautifully tinted with the summer sunshine. Where would you find a jewel more beautiful than the currant which is almost transparent and resembles the ruby.

I often tell in these pages of my experience in growing fruit trees, in what I call hedge rows. We have at Green's Farm many of these hedge rows where the pear, apple and plum, cherry and other fruit trees are grown closely together in the row with ample space between the rows. I can imagine no display of jewels at the city stores which are so beautiful as the display of cherries, apples and pears along these rows of closely planted trees. The distance for planting the trees may vary according to their vigor. I would plant dwarfs 3 feet apart, standard apple, pear and cherry trees 6 feet apart.

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# It is Easy Planting Trees Through Corn Marker Trails.

By C. A. Green.

People planting an orchard often spend much time in locating the exact spot where each tree is to be set out. The easiest way and the way I have practiced, is after carefully fitting the ground to mark it both ways with a corn marker which usually marks the rows 3½ feet apart.

When a plot of ground, either large or small, is marked both ways with a corn marker, you can easily decide whether the trees or vines you wish to plant, are to go in every other row or every third or fourth row or every sixth row, and you can have the trees of equal distance apart both ways by selecting every other row or every third or fourth row as marked by the corn marker both ways.

Supposing you are about to plant a small vineyard, which I am planning to set out next spring. I fit the ground carefully, and mark it both ways with a corn marker, which is 3½ feet apart each way. If I want the grape vines to be planted 7 feet apart, I will leave every other row of the corn marker for a row of grape vines. But this is too close together for me, therefore I will skip two rows instead of one, thus making the rows of grape vines 14 feet apart which is much wider than usual and wider than is necessary.

If it is not desired to have the vines so far apart, you can change the corn marker to three feet or two feet even. When I decide to plant grape vines 14 feet apart, leaving two vacant rows of the corn marker between the rows of grape vines, how rapidly the work can proceed without any hesitation as to where each vine is to be located. Not only the space between the rows will be located, but the space between each vine in the row, which in my little vineyard will be 7 feet apart and will be almost too close; thus I will plant a grape vine in every other mark of the corn marker. After having set out the vineyard in this way, skipping two rows of the corn marker or spaces between the rows of grapes, and skipping one mark of the corn marker between vines in the rows, I have the entire field or plot marked for planting corn or potatoes. Therefore, I proceed to plant in every cross mark of the corn marker not occupied by grape vines, a hill of corn or potatoes. Then I proceed to cultivate this plot of ground just as though it was all planted to corn or potatoes, giving the grape vines the same treatment that I do the other crops, the entire plot being marked out so plainly and so orderly that the potato crop can be cultivated without extra expense and the grape vines or trees can naturally be better and more easily cared for than if they occupied the entire plot without any other crop being located between the rows.

Notice that the system of marking and planting by the corn marker may be successfully and expeditiously used in planting trees. After the ground has been prepared and marked with a corn marker and trees have been planted in the corn marker trails, the trees simply occupy the position that hills of corn or potatoes should have occupied. You will notice that in this way, one may plant an orchard in a corn field and get the entire season's growth with no more attention than the corn or potatoes would ordinarily demand, and yet the fruit trees would be well cared for.

To illustrate further, supposing the field had been planted to corn, the past spring, and the corn has been cut, leaving the stubs of the corn plainly in view. Now you can see how easy it will be to locate where each vine or tree is to be planted by the position of the stubs or hills of corn. The corn marker trails will represent the same spots where vines are to be planted, the same as these hills of corn represent them.

## Maine's Apple King at Ninety.

Written for Green's Fruit Grower by John E. Taylor.

Eighty acres of orchards with 6,000 trees have made Phineas Whittier of Chesterville the orchard king of Maine, and he in December celebrated his 90th birthday. He has raised apples all his life. At the age of 21 he bought his original farm, which consisted of 110 acres of rocky pasture land and built the house in which he now lives. On August 31, 1848, he was married. The place has been enlarged by the purchase of other farms and brought under cultivation until it now consists of 400 acres.

Mr. Whittier made orcharding his special study and because of his success was ardent in the work and did much to bring this branch of farming to its present standing in the State. He was for a long time the possessor of the largest orchards in the State. He has now a pleasant and attractive home and in his old age is reaping the profits from his orchards as he has been doing the most of his life. This farmer has taken much interest in public affairs, having held many offices in his town.

# GREEN'S FRUIT GROWER

AN ILLUSTRATED MONTHLY JOURNAL

## GREEN'S FRUIT GROWER CO., Publishers

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Some Sayings of Lincoln.

"The reasonable man has long agreed that intemperance is one of the greatest, if not the greatest, of all evils among mankind."

"The way for a young man to rise is to improve himself in every way he can, never suspecting that anybody wishes to hinder him."

"I have been driven many times to my knees by the overwhelming conviction that I had nowhere else to go. My own wisdom and that of all about us seemed insufficient for that day."

"Neither let us be slandered from our duty by false accusations against us, nor frightened from it by menaces of destruction to the government, nor of dungeons for ourselves. Let us have faith that right makes might, and in that faith let us to the end dare to do our duty as we understand it."

## Railroads Get One-Twentieth of Consumer's Dollar.

Senator Thomas P. Gore, Chairman of the Senate Committee on Agriculture, made the statement recently in Philadelphia that out of farm produce that retails annually for \$13,000,000,000, the farmers get only \$6,000,000,000. The railroads, he said, get approximately \$500,000,000.

To illustrate Senator Gore's figures the Lehigh Valley Railroad has made a compilation of the most commonly used farm products, showing how much the farmer the middlemen, the railroads, and the retailers receive for their services.

Using the consumer's dollar as a basis the figures obtained indicate that the farmer gets an average of 50½ cents, packers, local shippers, distributors and retailers combined get 44½ cents, and the railroads get five cents. For an average haul of 1,500 miles, the railroads get only one-twentieth of the retail price.

These figures are based on the varieties of food that go to make up about nine-tenths of every family's grocery bill. Meat is not included, on account of the difficulty in arriving at a fair figure. But on such commodities as butter, eggs, milk, rice, potatoes, onions, sugar, tea, and the many kinds of canned, dried and prepared fruits and vegetables, it is entirely feasible to arrive at comparatively accurate figures. Any variation in the selection of the list will, of course, make some difference in the relative position of the producers and distributors, but the railroad's share remains the same. That can be figured to a certainty. For a 1,500-mile haul the railroads get only five cents.

On butter, eggs and sugar, however, the railroads receive the least share of the consumer's dollar. On commodities which

are worth less in comparison to bulk, the freight charge is naturally higher. On canned peas it is three cents, canned tomatoes four cents, potatoes five cents, and on such vegetables as turnips and cabbages six cents. But canned salmon, is brought all the way from the Pacific Coast to New York—3000, miles—for seven cents out of the dollar for which it is sold. The highest rate the railroads get on a food product is 11½ cents of the consumer's dollar, for bringing oranges in refrigerator cars, which are iced five times, from California to New York. All of which would tend to show that the railroads are being paid very little for the service they perform, and are not in any way responsible for the high cost of living.

Their charge is so low, in fact, that if the railroads are granted the five per cent. increase in freight rates for which they have petitioned the Interstate Commerce Commission, it will only make a difference of thirty cents to each household a year. This does not refer to food alone, but to every article of food, clothing, furniture or fuel that enters the house during the year. At the outside, the additional cost for food to each household based on an increased freight rate, will be fifteen cents a year.

## Thoughts Regarding Trees.

Editor of Green's Fruit Grower:—Trees do not receive the proper care when they reach their destination. The nursery man ships the trees at the best possible time but the person to whom the trees are shipped usually takes his time in getting them from the freight house or railway station as the case may be. This same person will leave the trees outdoors to be exposed to the elements of the weather.

I know of several bundles of trees that were at a railway station for over a week before the persons to whom they were shipped called for them. The room in which these trees were, was a waiting room. You can imagine the temperature in this room. Much too warm and dry for any plant to be in. The first person to be blamed if these trees do not grow will be the man who sold the trees.

To get the best results of any thing you have shipped to you, anything of plant life, you must give them the best care. Every person is notified of the arrival of anything at a freight house for them, by the clerk in charge. As soon as the notice is received the person to whom the shipment is made should at once see to it that the trees or plants be removed. If the planting can not be done at that time then the stock should be heeled in. If they must be kept over winter before planting, heel them in in a protected position. They must be protected from the severe west and north winds, and do not forget to heel them in deep enough.—F. A. Kuhn, N. Y.

Mr. L. C. Judson, Wells Bridge, N. Y., says apples are so scarce in most places they can only be bought for \$4.00 or \$4.50 per barrel. "If there are any farmers within a reasonable distance who would sell fairly good apples at a reasonable price we would be very glad to get them. If you will insert such a notice in your paper and I receive any replies I will insert the names, etc., in our local paper and possibly both producer and consumer may be benefited."

Note: We have published names of parties having apples for sale in December issue.—C. A. Green.

It is easy to say how we love new friends, and what we think of them, but words can never trace out all the fibres that knit us to the old.—George Eliot.

## Can a Man Be Taught Just How to Prune By Written Communication.

By C. A. Green.

I have just come into my office after spending some time pruning peach and dwarf pears in my garden on November 25th. As I nipped off the shoots here and there I said to myself, how is it possible for me or any one to explain to another man by a written communication how the pruning should be done. The most the teacher can do to instruct another person in pruning is to give suggestions on some of the important features of the work. No two trees that I have been pruning required precisely the same treatment. Trees of different ages and different kinds of fruit need different treatment.

The row of trees I have just finished pruning, consists of peach and dwarf pear trees, now a tree of peach, then alternating with dwarf pear to the end of the row, the trees being set four feet apart forming what I term a fruit hedge row. When planted, the trees were of the smallest size. They were set out one year ago last spring, therefore they represent two years' growth. I found some fruit spurs on the dwarf pear trees which were distinguishable from the other shoots by their short and knobby appearance. I do not disturb these fruit spurs, but on all other shoots I cut off nearly all of the last year's growth from each dwarf pear tree. The dwarf pear has a tendency to form too high a top, therefore it is particularly necessary that it should be severely headed back each season. But I have found that the standard pear tree is far more productive when the new growth is shortened back severely each year and the trees are not allowed to grow so high as they otherwise would.

I cut off the largest portion of the new growth of each shoot of the young peach trees standing in this row. Finding the branches more numerous on the peach trees than on the dwarf pear trees, I thin out more of the branches so that the interior of the trees will not be crowded. I noticed that there were some fruit buds on these young peach trees that I did not hesitate to remove, as much of the new growth contains fruit buds, for the reason that I knew these trees could not bear very much fruit next year, owing to their small size.

Now I have told you precisely how I have trimmed these trees and still you would have learned much more if you could have seen me plying my sharp pruning knife rapidly from one branch to another. None of these trees were pruned precisely alike, but all of them were cut back to about a uniform height so that the level of the tops of the trees are about the same.

It is surprising to most people to learn how any kind of a fruit or ornamental tree can be modified in size and shape by pruning. The growth of the tree can be almost entirely suspended by excessive and continuous pruning during the summer months; thus you can make a low growing hedge of the apple tree, the peach, pear, plum or even the poplar tree.

The Japanese people have succeeded in dwarfing forest trees so that at the age of 100 years, they do not stand over two or three feet high. We know of no such dwarfing as this in the United States.

## FRIENDLY TIP.

Restored Hope and Confidence.

After several years of indigestion and its attendant evil influence on the mind, it is not very surprising that one finally loses faith in things generally.

A New York woman writes an interesting letter. She says:

"Three years ago I suffered from an attack of peritonitis which left me in a most miserable condition. For over two years I suffered from nervousness, weak heart, shortness of breath, could not sleep, etc.

"My appetite was ravenous, but I felt starved all the time. I had plenty of food but it did not nourish me because of intestinal indigestion. Medical treatment did not seem to help. I got discouraged, stopped medicine and did not care much whether I lived or died.

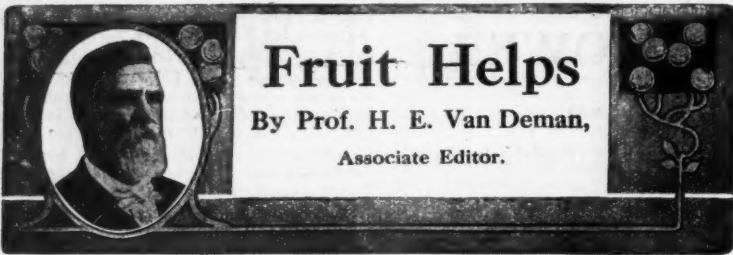
"One day a friend asked me why I didn't try Grape-Nuts food, stop drinking coffee and use Postum. I had lost faith in everything, but to please my friend I began to use both and soon became very fond of them.

"It wasn't long before I got some strength, felt a decided change in my system, hope sprang up in my heart and slowly but surely I got better. I could sleep very well, the constant craving for food ceased and I have better health now than before the attack of peritonitis. "My husband and I are still using Grape-Nuts and Postum."

Name given by Postum Co., Battle Creek, Mich. Read, "The Road to Wellville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.





## Fruit Helps

By Prof. H. E. Van Deman,  
Associate Editor.

### Thoughts About Spraying.

With the return of each year the same problems come up again and again and among them is the matter of spraying. It is a very complex subject, for there are many diseases and insects to fight and they need different treatment and at various times. There are no fixed rules for spraying because there are so many and so varied requirements and remedies that what would be proper in one case might not be in another. There must be the most careful study of the troubles to be dealt with and the detail of the spraying to be done, for it is details that count, if properly worked out. It may seem like needless repetition to state over and over again the principles of spraying and to explain the reasons and details of the various things to be done, but it is like many other things in life that have to be repeated over and over with the recurring needs.

### THE TWO MAIN DIVISIONS.

There are two main divisions of the general subject of spraying, one of insect destruction and the other for the prevention of fungus diseases, with numerous subdivisions to accord with the many forms of both classes of enemies. And there are two main remedies in use, arsenic for insects and sulphate of copper for fungi. Besides these two there are a few other chemicals that are useful in this work and certain methods of combating them in other ways. All these enemies and the details of the conflicts with them are described in the numerous bulletins issued by the United States Department of Agriculture and the experiment stations of the several states. Everyone interested in spraying for any of these enemies should try to get these publications and study them carefully long before the work is needed to be done, so as to be prepared for it when the time does come. But for the benefit of those who may not avail themselves of these privileges it will serve some good purpose to give an outline of the work.

### FIGHTING INSECTS

There are two classes of insects as regards their habits of feeding. One bites its food and the other sucks it from the interior of the things they feed upon. Those insects that live by biting may be killed by poisoning the foliage or whatever is eaten, but sucking insects cannot be killed in that way, because their tube-like mouth pieces are pushed in where the juices of the plants are found and where no poison can be introduced. It is at once evident that very different means of destruction must be used for the two classes. As arsenic is one of the cheapest and most effective stomach poisons it is used very generally in some form by spraying it onto the trees or plants used as food by the pests to be killed. Arsenate of lead is one of the best forms because the particles are very finely divided and the mixture sticks well on the smoothest surface.

It has also been learned, incidentally, by the use of the lime-sulphur mixture for scale insects that it is a stomach poison for some of the biting insects but not for all of them. It kills the larva of the leaf eating insects but not the codling moth larva, because of the very small quantity eaten by it in getting into the apples and pears, which fruits are almost its only food.

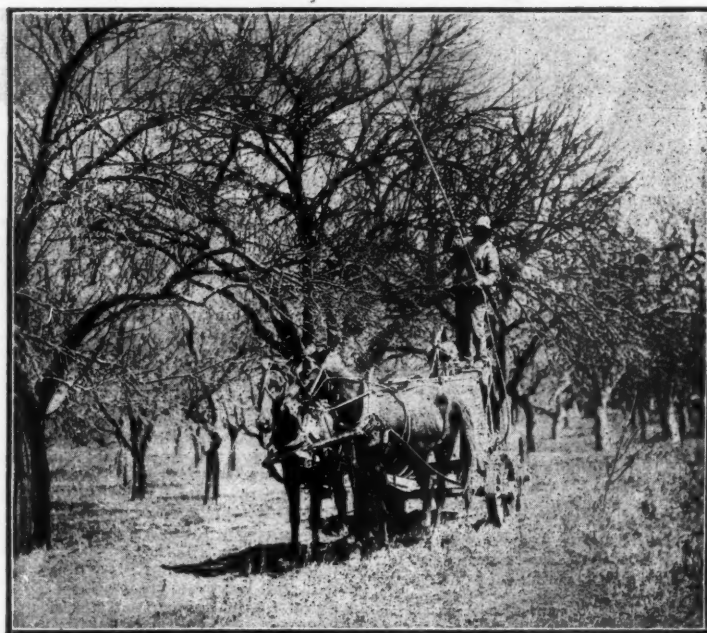
The sucking insects, such as the aphids and scale, must be killed by contact with something from the outside and this makes their destruction quite difficult in many cases. The lime-sulphur preparations are the best for most of these pests and are cheap and may be easily made. The kind that is called "self-boiled" is the best for summer use when the aphids or plant lice are actively at work.

Kerosene emulsion is another fatal mixture for application to the aphids. Nicotine is also sure death to them and there are several commercial names for the tobacco extracts that are offered for sale, such as "Black Leaf" and "Tobacine." They are diluted and applied by spraying according to the directions given with the preparations.

### FUNGUS DISEASES.

There is scarcely a species of tree or plant that is not preyed upon by some fungus or bacterial disease. These are forms of vegetable life that are so small that many of them can only be seen by the aid of powerful microscopes, although

the effects of their presence are evident enough to be seen for long distances, in many cases. There are blights, rusts, scabs, wilts and many other names for these enemies or parasites of the things we are growing. Their life histories have to be studied out that the peculiarities of each may be known and the stages in which they may be most easily prevented or destroyed. It has been little more than 25 years since the discovery of any effective means of fighting these tiny but yet mighty enemies of the fruit grower. This was the use of sulphate of copper and it was an accidental discovery in a vineyard at Bordeaux, France, in an attempt to prevent the grapes from being stolen by poisoning them with a mixture of lime and sulphate of copper. This led to a long series of experiments with this preparation on almost every kind of fruit and vegetable that is troubled with diseases and in many cases they have been successful. Experiments have been made with various other chemicals for the same purposes and some valuable discoveries have been made but there are few preparations that are more efficient for most fungus diseases than the Bordeaux Mixture.



This photograph shows the method of spraying the top branches of large apple trees near Rochester, N. Y. Another spraying outfit is at work in another part of this orchard better adapted for spraying the lower branches without attempting to reach the upper branches. This orchard gives evidence of considerable pruning, cultivation and general attention, yet it would have been better if the trees had been trained with lower heads.

One very important discovery was made in the course of the use of the lime-sulphur mixtures for insect troubles, that they were very efficient as fungicides as well. Their killing power on the germs of some of the fungus diseases is quite equal or superior to that of the Bordeaux Mixture and the double purpose of destroying both insects and fungi is attained. This is a most fortunate fact and simplifies and cheapens the work greatly. But there must be the closest study of the enemies to be fought and then prompt and thorough work done or there will be little success. It is all a mistake to fight at random or by guessing that any kind of spraying will be effective or at any time that may be convenient. This one point must be fixed in the mind of everyone who attempts to control the fungus diseases, that the spraying must be done to prevent them and not to cure them after they have become well established. They work internally in most cases and the spraying being altogether external cannot reach the seat of the trouble. The troubles must be anticipated in a great measure and the remedies applied beforehand. The germs that will cause the diseases will come from the outside and if the surfaces where they are apt to light are covered with the deadly chemicals they will die before they have had opportunity to germinate and enter the tissues of the things to be protected.

### DOUBLE SPRAYING

Another fact that has been learned by experience is, that there is much to be gained by combining the arsenical prepa-

arations with some of the fungicides. This is especially true of arsenate of lead added to the lime-sulphur mixtures. They may thus be made to do at one spraying what each would do if applied separately, which is a great saving of time and consequent expense. One thing that has been quite clearly proved by recent experiments is, that one pound of arsenate of lead is almost as effective as an insecticide as two pounds in fifty gallons of water, which has long been the amount commonly recommended. Any excess above what is really needed is that much wasted.

### CONCLUSIONS

Decide to spray more intelligently and more faithfully this year than ever. Procure and study the Government and State experiment station bulletins at once. Get the needed materials and spraying machines in good season. Do the work just at the right time—not too early or too late. Be assured that spraying is as necessary as any other part of the farm work and then lay the blame on yourself, mainly, if it is not very effective. Do not overlook the details for success depends on them.—H. E. Van Deman.

## Answers to Inquiries.

### Protect the Bees from Poison Spray.

Prof. Van Deman:—I wish to save the bees that are so helpful to fruit growers. Cannot fruit growers protect the bees from poison spray without loss to themselves and their crops of fruit? Is it safe to instruct fruit growers to spray just before the blossom buds open and then defer spraying until the bees no longer hunt for sweets in the blossom? Please state how long this period of suspended

deposits that are now the foundation of a large part of our best soils.—H. E. Van Deman.

### Kansas Crops.

Prof. Van Deman:—A Kansas man has told me that the soil is so deep and porous in Kansas that if they have rain in winter or spring the soil will produce a crop without further rains during summer, and that if Kansas farmers get a full crop once in three years they can succeed as farmers. Do you agree with these statements?—Subscriber.

Reply: No I do not agree to any such belief. I have had plenty of experience in Kansas farming and a partial crop failure is bad and an entire failure is terrible. When more than one year of failure comes it is something to be remembered with sorrow.—H. E. Van Deman.

### Melon and Banana Apples in North Carolina.

Prof. H. E. Van Deman:—Please advise what you think or know of Melon and Winter Banana apples for N. C. and Southern planting. We ordered some scions last spring. The company did not have all the kinds wanted and put in Melon as a substitute. We would like to know also if English (Persian) walnuts are grown successfully in the South and if good trees can be had from seedlings. If so, where could I secure nuts suitable for planting.—W. T. Hanner, N. C.

Reply: The Melon and Banana apples are both excellent kinds and will do well in the apple growing regions of the South. Their flavor is very fine but not equal to the very best. Both are not so late keepers as some winter varieties but will keep about like Jonathan.

The Persian walnut will and does succeed in many of the southern states. Seedlings from nuts planted will not come entirely true to the originals and grafted or budded trees of the best varieties are far safer to depend on. There are a few nurseries that have trees grafted on common black walnut roots and while they are quite costly as yet they are much more valuable than seedlings.

### Orchard Pruning.

Prof. H. E. Van Deman, Dear Sir:—I have a 3-acre apple orchard planted the spring of 1912, which passersby claim to be the finest in our county.

The soil is very rich and I have given it the best of cultivation and this year growth runs from 4 to 5 feet. The trees are Stayman and Delicious. I have read many bulletins and Fruit & Farm Journals with instructions "How to prune," but feel myself unable for the work and know of no one experienced pruner whom I can hire.

But what I am after most is this. I can get tobacco stems from the factories here delivered on the orchard for \$6.00 per ton of 100 bushel. Do you consider them worth this much for mulch, humus and plant food. Say a bushel or so around each tree. The stems are dry and cut from one to three inches long.—R. A. Knisely, Pa.

Reply: The mistake is sometimes made of pruning young apple trees too much. If they are given the right shaped heads at the right height, which is about two and one-half feet from the ground for most varieties, there need be little worry about them for several years. The heads will open materially when they begin to bear loads of fruit. Severe cutting back induces more growth to replace that taken off and this is not proper treatment for apple trees. Peach trees are quite different in their needs and should have a constant renewal of young wood, for on it all the fruit is borne. Common sense will direct the cutting out of branches that cross others that it is evident should remain.

Tobacco stems that cost but \$6.00 per ton delivered in the orchard are profitable to apply as mulch on the ground under the trees.

Gentlemen:—I have been much interested in Prof. Van Deman's articles. I note he says mazzard stocks only are valuable for sweet cherry. How about our native sweet cherry for stocks? It seems to me they should thrive. I greatly appreciate your paper.—Z. Asbury Gill, Va.

Reply: The common sweet cherry trees that are growing all over Virginia and some other eastern states are of the true mazzard type and are the best of stocks for the improved varieties of the sweet cherry. In selecting seeds to plant from which to grow seedlings for this purpose those from the thriftiest and healthiest trees should be chosen. The seeds must not be allowed to get very dry. If they are stratified in moist sand or earth soon after being gathered and planted early the next spring they ought to grow.

There are some persons who think that Sunday is a sponge to wipe out the sins of the week.—Beecher.

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# How to Know the Insect Pests and Plant Diseases and How to Destroy Them.

(Continued from Page 3.)

## QUINCE.

**Quince curculio.**—This curculio is somewhat larger than that infesting the plum and differs from it in its life history. The grubs leave the fruits in the fall and enter the ground, where they hibernate and transform to adults the next May, June, or July, depending on the season. When the adults appear, jar them from the tree onto sheets or curculio-catchers and destroy them. In order to determine when they appear jar a few trees daily, beginning the latter part of May.

**San Jose scale.**—See under APPLE. **Round-headed apple-tree borer.**—See under APPLE.

**Leaf and fruit spot.**—Treat same as for apple scab.

## RASPBERRY, BLACKBERRY AND DEWBERRY.

**Sawfly.**—The greenish, spiny larvae feed on the tender leaves in spring. Spray with paris green or arsenate of lead, or apply hellebore.

**Cane borer.**—The larva is a grub that burrows down through the canes, causing them to die. In laying her eggs, the adult beetle girdles the tip of the cane with a ring of punctures, causing it to wither and droop. In midsummer cut off and destroy the drooping tips.

**Anthraxnose.**—Anthraxnose is very destructive to black raspberries, but not often injurious to the red varieties. It is detected by the circular or elliptical, gray, scab-like spots on the canes. Remove all old canes and badly diseased new ones as soon as the fruit is gathered. Although spraying with bordeaux, 5-5-50, will control the malady, it may not be profitable. If spraying seems advisable, make the first application when the new canes are 6 to 8 inches high, and follow with two more at intervals of ten to fourteen days.

**Crown gall, or root knot.**—This is often destructive, particularly to the red varieties. It is detected by the large, irregular knots on the roots and at the crown underground. It is a contagious disease. Never set plants showing root knots. Avoid planting on infested land. The same disease occurs on peaches.

**Red rust.**—Red rust is often serious on black varieties, but does not affect red ones. It is the same as red rust of blackberry. Dig up and destroy infected plants.

**Cane blight or wilt.**—See under CURRENT.

## STRAWBERRY.

**White grubs.**—These large curved white grubs are the larvae of the common June beetles. They live in the ground, feeding on the roots of grasses, weeds, and the like. Dig out grubs from beneath infested plants. Early fall cultivation of land intended for planting will destroy many of the pupae.

**Leaf spot.**—This is the most common and serious fungous disease of the strawberry. It is called also rust and leaf blight. The leaves show spots which are at first of a deep purple color, but which later enlarge and the center becomes gray or nearly white. Soon after growth begins, spray the newly set plants with bordeaux, 5-5-50. Make three or four additional sprayings during the season. The following spring, spray just before blossoming and again ten to fourteen days later. If the bed is to be fruited a second time, mow the plants and burn over the beds as soon as the fruit is gathered.

## General Plan for Spraying the Apple Orchard.

I. Dormant season before leaf buds open but just as they are swelling: a. Lime-sulphur, 32° Beaumé, as a contact spray for San Jose scale and oyster-shell scale, dilute concentrate 1-8. Blister mite, dilute concentrate 1-11. b. Add arsenate of lead, 2 lbs. to 50 gal., to the lime-sulphur as a poison for Bud moth, Cigar case-bearer.

II. After leaf buds open but before blossoms open, i. e., when just beginning to show some pink. Watch weather and get spray on before rain, not after: a. Lime-sulphur solution, 32° Beaumé 1-40, or bordeaux, 3-4-50, for apple scab (the fungus). b. Arsenate of lead, 2 to 3 lbs. to 50 gal., added to lime-sulphur or bordeaux as a poison for Bud moth, Cigar case-bearer, Cankerworm. This application should never be omitted during cold, rainy seasons.

III. After petals have fallen, beginning when about two-thirds have fallen. Have spray on before rains come. This is important. a. Lime-sulphur, 32° Beaumé 1-40, or bordeaux 3-4-50, for Apple scab, Leaf spot. b. Arsenate of lead, 2 to 3 lbs. to 50 gal., used with lime-sulphur or bordeaux for Codling moth, Cankerworm, Bud moth. This is the most important of all the applications.

IV. Ten days to two weeks later. Before rain period: a. Lime-sulphur, 32° Beaumé 1-40, or bordeaux, 3-4-50,

for Apple scab, Leaf spot. b. Arsenate of lead, 2 to 3 lbs. to 50 gal., used with lime-sulphur or bordeaux for Codling moth, Cankerworm.

V. Eight to nine weeks after blossoms fall: Same as IV for late scab infections and late attacks of codling moth. In most seasons this application is not necessary. If aphid appears, spray before leaves curl with whale-oil soap, 1 lb. to 6 gal., or with kerosene emulsion diluted with 6 parts of water, or use one of the tobacco extracts.

## General Plan for Spraying the Peach Orchard.

Taken from U. S. Dept. Agr., Bureau of Entomology Circular 120.

I. Dormant season before the leaf buds begin to swell: a. If scale is not to be combated, spray with lime-sulphur, 32° Beaumé, 1-15, or bordeaux, 4-4-50, or copper sulphate, 2 lbs. to 50 gal. water, for Peach leaf-curl. Any of these will be effective if properly applied. Spray against the wind so as to coat every bud, being sure to apply before buds have begun to swell at all. b. Lime-sulphur, 32° Beaumé, 1-7½, for San Jose scale. This will also control peach leaf-curl.

II. About the time the calyxes, or shucks, are shedding from the young fruit: a. Self-boiled lime-sulphur, 8-8-50, with arsenate of lead, 2 lbs. to 50 gal., for Scab, Brown rot. As this is rather early for the scab and rot, the self-boiled lime-sulphur may be omitted, using merely, b. Arsenate of lead, 2 lbs. to 50 gal. of water, for Curculio. If the self-boiled lime-sulphur is omitted, add to each 50 gal. water, milk of lime made by slaking 2 to 3 lbs. of good stone lime. This will tend to counteract any caustic action of the arsenate of lead.

III. Two or three weeks later, or about one month after petals fall: a. Self-boiled lime-sulphur, 8-8-50, for Scab, Brown rot. b. Add 2 lbs. arsenate of lead for Curculio.

IV. About one month before fruit ripens: a. Self-boiled lime-sulphur, 8-8-50, for Brown rot. b. Omit arsenate of lead.

## Fungicides.

### BORDEAUX MIXTURE I.

Copper sulphate (blue vitriol or blue stone), 4 pounds; Stone lime, 4 pounds; Water, 50 gallons. (If hydrated lime is preferred use 6 pounds.)

Prepare a stock solution of copper sulphate by dissolving the copper sulphate in water, using one gallon of water for every pound to be dissolved.

Place the copper sulphate in a burlap sack and suspend in a barrel or wooden vessel of water to the depth of a few inches until dissolved. (Do not place entire amount under water.) Place in the spray tank one gallon of this stock solution to every pound of copper sulphate to be used and fill tank about half full of water. Prepare the required amount of lime to be used for each spray tank full by slaking the lime and adding water until a milk of lime is produced. Strain this into the copper sulphate solution, keeping the mixture stirred thoroughly. Add water to fill the tank and apply.

### BORDEAUX MIXTURE II.

Copper sulphate, 2 pounds; Stone lime, 2 pounds. (If hydrated lime is preferred use 3 pounds.) Water, 50 gallons.

To be used instead of Bordeaux I on peach, plum, cherry and other plants with tender foliage.

## SELF-BOILED LIME, OR LIME-SULPHUR WASH II.

Stone lime, 8 pounds; Flowers of sulphur, 8 pounds; Water, 50 gallons.

Place the lime in a barrel, and pour on enough water (about two gallons) to start in slaking. Then add the sulphur and about two gallons more of water. Stir thoroughly and do not let the mixture cake on the bottom of the barrel. As soon as the slaking of the lime is over dilute to 50 gallons of water and strain through a sieve of 20 meshes to the inch, working all of the sulphur through the strainer.

(This mixture will not destroy San Jose scale. Use lime-sulphur I, or commercial solution for this purpose.)

## Insecticides.

### LIME-SULPHUR I.

Sulphur, 15 pounds; lime, 20 pounds; water, 50 gallons.

Place the lime in about 10 gallons of hot water in an iron kettle, then gradually stir in the sulphur. Boil thoroughly for one hour, keeping the mixture well stirred, adding more water if necessary to keep from sticking. Strain, dilute with water to make 50 gallons and apply.

(This mixture corrodes brass and copper and a pump with brass fittings should be cleaned by running clear water through it after each day's spraying. Never boil the wash in a copper kettle.)

## HOME MADE CONCENTRATED LIME SULPHUR SOLUTION.

Lump lime, 50 pounds; sulphur, 100 pounds; water, 50 gallons.

Use best grade of lump lime obtainable. Should test 90 per cent. calcium oxide and be free from impurities.

Heat to boiling in cooking vessel about fifteen gallons of water then gradually place in it the fifty pounds of lime. As the lime begins to slake add the 100 pounds of sulphur. After the slaking of the lime has ceased, add enough water to make the full amount required by the formula. If fire is used additional water will need to be added to keep the mixture to the required amount. If steam is used this will not be necessary. The mixture should be kept at the boiling point for practically one hour or until all the lime and sulphur are dissolved. Constant stirring will be necessary. A measuring stick graduated according to the capacity of the vessel used will aid in keeping the volume of solution up to the required amount. When additions of water are necessary, hot water should be used.

Place in an air tight barrel when cool, and use as needed. A hydrometer reading should be made of the prepared solution and dilutions made according to table.

## COMMERCIAL LIME SULPHUR SOLUTION.

This solution can be obtained on the market and is ready to apply when properly diluted with water. A hydrometer reading should be made before using. 32 Degrees Beaume is considered as standard and commercial brands should give this reading.

Dilute according to table herein given.

TABLE I.

Dilutions for Dormant and Summer spraying with lime-sulphur mixtures. (From Bulletin No. 330 New York Agricultural Experiment Station.)

Reading on hydrometer	Number of gallons of water to one gallon of sulphur solution.	
	For San Jose scale	For summer spraying of apples.
Degrees Beaume		
35.....	9	45
34.....	8.75	43.25
33.....	8.25	41.50
32.....	8	40
31.....	7.50	37.75
30.....	7.25	36.25
29.....	6.75	34.25
28.....	6.50	32.75
27.....	6	31
26.....	5.75	29.50
25.....	5.25	27.75
24.....	5	26
23.....	4.50	24.25
22.....	4.25	22.75
21.....	3.75	21.25
20.....	3.50	19.75
19.....	3.25	18.25
18.....	3	17
17.....	2.75	16
16.....	2.50	15
15.....	2.25	14
14.....	2	12.75

## The Best State for Growing Peaches and Apples for Market.

G. M. Getz of Pennsylvania asks Green's Fruit Grower to answer the above question.

Reply: It would require a remarkably wide and varied experience in the different states to be able to answer the above question. Then again if the editor absolutely knew which was the best state for these fruits he might have some hesitation in replying, for these fruit growing states are jealous of each other, thus the editor might give offense. It may be safely said that there is no man living who is familiar with the various sections of the different states as he should be in order to answer correctly the above question.

There are states in which apple growing is successful, but where peach growing would not be a success. The apple is a northern fruit, doing better in the north than it does in the south. The peach is more of a southern variety, doing better midway south than it does far to the north. It would be easier to express an opinion as to which is the best apple bearing state and which the best peach bearing state than it would be to combine the two and advise which is the best state for producing both peaches and apples.

Not many years ago if this question had been asked, the answer would have been Virginia, for Virginia is a great peach growing state. Its record is not so good now as it has been in the past for growing peaches. It would not be proper to mention New York state as a whole as a peach growing state, because there are many sections of New York where peaches cannot be grown. In the Adirondack mountains of New York no apples can be grown except crab apples or others nearly as hardy. There are sections of Pennsylvania where peaches are not much grown, but generally speaking Pennsylvania is a peach growing state. The largest peach orchards in the world have been planted in Georgia, but so far as I can learn, though the peach crop there seldom fails, the expense of getting the fruit to eastern markets is so great that peach growing in Georgia has not been

found so profitable as in the more northern states.

My advice to Mr. Getz is that he be careful in selecting a site for his peach orchard. He should be far more careful in this than with an apple orchard, and that he does not depend so much upon the state in which he plants his trees as upon the particular features of the spot where his orchard is to be placed. He should remember that large bodies of water are particularly helpful to peach and apple orchards, such as the Chesapeake Bay and the great northern lakes.

## Setting Out an Orchard.

Green's Fruit Grower:—I have a ten acre field which I wish to get into a bearing orchard as soon as possible. The land is badly run down. Last spring I sowed it to clover, intending to plow it under during the summer of 1914, and set to trees in the fall of 1914. Experience teaches me that clover is not good for a young orchard. I have decided to set the orchard the coming spring as trees seem to do better here if set out in the spring. Had I better plow the land next spring and be a year ahead, or shall I wait and plow the clover under and set trees in the fall? The land has perfect water and air drainage, being a limestone loam, situated near the top of a hill and sloping southeast. I have a few Rome Beauties and York Imperial that never fail to bear and ripen to perfection. They seem to be above frost line.

I have 200 imported seedlings, which I grafted and set in a close row last spring. They made poor growth (from two to twelve inches) owing to drought and poor soil. Do you advise removing these to nursery row in the garden, or attempting to fertilize them where they are?—Wm. Gillinwater, West Virginia.

Reply: I would plow the clover and sod under as early as the ground will bear plowing next spring, and after preparing the soil as thoroughly as possible mark out the entire field with a corn marker. Certain cross marks of the corn marker will indicate where each tree is to be placed, which is the best and easiest way for laying out and planting an orchard. Then you can plant corn in the marks made by the corn marker among the trees, or potatoes or beans. Then by giving the crop thorough cultivation the trees will be cultivated and will do as well or better than if they occupied the entire ground alone.

I would not dig up the seedlings which were planted about a year ago. I would leave them, hoping they would make a vigorous growth next spring, which will enable you to bud them in August or September.

Consoling.—Mrs. Noowedde (weeping), "You don't love me anymore. You gave all those beautiful cigars I gave you Christmas to the janitor and the hall-boy."

Noowedde—"Don't cry, darling; they'll bring them back soon."—Life.

## Let the Breakfast Call

mean a dish of crisp, golden-brown

## Post Toasties

served with a sprinkling of sugar and some rich cream.

This delightful food made of choice Indian Corn—flaked and toasted—is ready to serve direct from the package.

Just the thing for breakfast, lunch or supper, winter or summer.

A try tells why!

Toasties are sold by grocers—everywhere.





### The Pomme Grise Apple.

Among the interesting varieties of rare fruits embraced in the collection of apple trees at Green's Fruit Farm, is the Pomme Grise apple (usually pronounced Pommy Gree). This is a small apple generally covered with russet, but the specimens in my hand at the present moment as grown at Green's Fruit Farm are only partially covered with russet. This is considered an apple of high quality. Its flesh is yellow, it is moderately juicy, has a large core for a small apple, may be eaten at any time during winter, but is at its best about the holidays or later.

At Green's Fruit Farm this apple is an annual bearer and is productive, but since the apples are small it is doubtful if it can be recommended as a commercial variety. Every apple fancier should have a tree of the Pomme Grise, also the Lady apple, which is about the same size as the Pomme Grise and more attractive in color. The Lady apple and Pomme Grise could not be grown for market and sold at a profit except at a fancy price.

### Can the Average Fruit Grower Be Trusted to Pack His Own Fruit.

If you will ask the average apple buyer, he will tell you that a grower of apples cannot as a rule, be trusted to sort and pack his apples as they should be sorted and packed.

The Association of Orange Growers and some of the apple growers' associations of the west, have by experience, found that the only way by which apples can be uniformly sorted and graded and packed is to take this work entirely away from fruit growers and place the sorting and packing in the hands of experts employed particularly for this work by the association of fruit growers.

It can be seen readily that this may be a wise course to pursue. If you will examine the sorting and packing of one hundred fruit growers, you will find differences of opinion as to what may be considered a first class apple, and as to how they should be packed.

I have had personal experience in putting up apples of a superior quality in boxes at Green's Fruit Farm. I have working for me, trusty men, those who are intelligent and capable, yet I find it difficult to instruct these men in regard to packing apples in boxes and in grading them. The tendency of these men in packing is to face the boxes with apples that are of larger size and greater beauty than those in the other portions of the box. The temptation is also to put in each box, four or five apples that are too small or lack that high color and that should not have gone into the box.

### Always Something to Be Done.

Work is never done about the home dwelling. There is ever a door or window, the stove or furnace, the roof, chimney, cellar or porch that needs attention. It is the same about the yard, somebody must continuously pick up waste paper, sticks, or straw thrown by children on the lawn. The grass must be cut, the borders straightened, the garden and flower beds cleared of weeds and grasses.

It is the same with the berryfield, vineyard and orchard. Beginning with the early spring as soon as the ground will bear cultivating, the work is started with a two-horse cultivator or shallow plowing. Later on, we are apt to find sappy shoots starting out from the trunks, also branches which can be easily brushed off at the start by one sweep of the hand. Then attention must soon be given to insects and fungus diseases which are so easily destroyed by spraying. Then comes the ripening of the early varieties, followed by fall varieties and those ripening late in winter, the gathering and marketing. During the winter months, we are watching each tree for the eggs of the tent-caterpillar which being of a lighter color than the twigs on which they are borne, are easily discovered and destroyed. Then comes the pruning which may be done at any season when the knife is sharp and the foliage has fallen. A little pruning each year, may be done at slight cost. I estimate that if annual pruning is pursued it will not cost over \$2.00 to go through an acre of orchard with pruning knife and saw.

Drawing Gravel or Muck in Winter.—Often the winters are sufficiently open for drawing gravel to reinforce the driveways and open spaces around the farm barns

and other outbuildings, and the walks, which should not be soft and muddy even in the wettest weather. Perhaps you have a muck lot from which you can draw muck during the winter, mixing it with lime, which destroys acidity in the muck and releases valuable fertility. Manure from the stables should be drawn at least once a week during winter.

### The Tramp.

Are all tramps crazy? I refer to professional tramps, that is those who have the wanderlust and who are continually tramping from one part of the country to the other, moving north in summer and south in spring, much like the migrating birds.

Yes, I consider such people demented, for how can it be possible that anyone with a sane mind should choose such a life, or fall into such shiftless, aimless and often criminal habits. The question arises what shall the farmer do when a dirty,

The above thought occurs to me in connection with the new farm of 100 acres, which I bought last spring, and on which we have started two orchards, embracing apples of the highest quality, also some of the standard kinds, such as Baldwin, Greening, Spy, also a modest planting of pears, peaches and grape vines. While not present on this farm, in imagination I not only see these trees as they are, modest as they appear on the landscape, but my imagination goes farther and sees these trees as they will look at the end of ten years, and again as they will appear when twenty years old. Then I see them filled with blossoms and later with beautiful fruit.

One day this fall, when I was visiting Green's Fruit Farm at the season when many varieties of apples and pears were fully ripe, and the ground was covered with specimens blown off by the wind, I thought I was alone, but heard voices in the distance. Soon a bevy of seven children appeared carrying baskets. They were the boys and girls of the family of my superintendent and his assistants. They were intently engaged in conversation and seemed to be having a good time. You need not guess what these children were after. They were approaching the apple tree which ripened the earliest fruit, and the pear tree whose fruit was sweetest and most mellow, and the early peach tree. Later these children will be wandering with their baskets toward the sweet chest-nut trees and the grape vines on the hill. No one could watch these children without considering how attractive farm life can be made, by surrounding the home

not take it readily. Later, after smelling of it cautiously, he made a grab at it as though expecting that he was to be pricked or thumped, indicating that he had been tricked by some boy or man many times and that he was not expecting acts of kindness.

This morning I visited the stable again, having determined to so treat this horse that he would be expecting kindness instead of abuse. Fearing that he would bite my hand at the time he grabbed for the apple, I stuck a sharp stick into each apple and held it out for the strange horse to eat. He made a grab for it as before. Then I gave him another and another, until at last, he seemed to realize that no trick was being played on him, but that he could expect good treatment when the apple was offered. I shall continue this treatment of the new horse, feeling confident that in time, he will take the apple from my hand without grabbing it or snapping at it. In other words, I will treat the horse so kindly that when I approach him, he will expect only kindness.

Horses that have been on my place for many years are so familiar with my bringing them apples, they expect an apple whenever they approach me, no matter where they are, and sometimes will nose about my pocket in which I have an apple stored for eating between meals.

I take great pleasure in making pets of the cats, dogs, horses, cows and other such creatures, which are so useful and attractive about the home. It is easy to make friends with any of these animals. It is easy to make friends with men and women if you have learned how to do it, but it is still easier to make friends with horses, cows and dogs, for these animals have fewer friends and greater need of friends.

### Impressions from Trees When in Blossom.

Perception is a strange faculty. One man on waking in the morning looks out of his window and perceives certain beauties of the landscape. Others may look out of the same window upon the same view and not perceive many, or possibly any, of those beauties. Two men looking upon a great painting or statue or a great work of architecture, vary greatly in what they perceive. The man of culture, the man who has studied art, sculpture and architecture, sees vastly more than the man who has not trained himself in appreciation or who has not studied those subjects; but none of us are apt to see in those art objects what the man can see who produced them.

There are men, who in driving by an apple, peach, cherry or pear orchard in full bloom may scarcely receive sensations of any kind, whereas another more poetic, more imaginative, may almost stop breathing for an instant under the inspiration which the beauty of the scene and its suggestions make upon his sensitive organism.

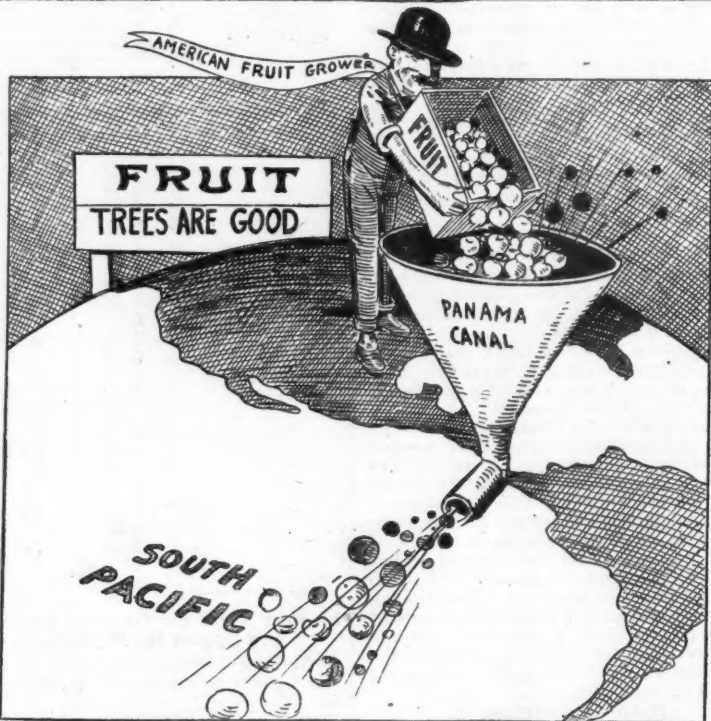
There is no blossoming orchard that has not a story to unfold, a promise and revelation of that which is to come. These blossoms seem to have been newly-born, but in fact this is not true, for the blossoms have long been waiting on the branch for the warm breath of the sun to fall upon them. They exist many months before they open. You may cause a branch of the peach to blossom any time in winter by placing its stem in a vase of water in a warm room.

Apple blossoms! What memories they recall of trees that blossomed and fruited for those long since put to sleep in the village cemetery. What shall these blossoms produce? Shall it be gnarled, knotty and wormy fruit fit only for swine, or shall they produce beautiful, golden, gemlike specimens, or those of crimson hue? Of one thing you can rest assured, and that is that nature will do her part. The blossoms are ready to produce the finest specimens if you will give them opportunity. But you must defend the blossoms and the maturing fruit from their enemies and give needed attention in pruning, fertilization and cultivation.—Charles A. Green.

The February sunshine steepens your boughs and tints the buds and swells the leaves within.—Bryant

### His Fruit Garden.

Mr. Cyrus Long, a subscriber of Green's Fruit Grower, states that fruit growing is a paying industry even though one has but a small city or town lot. He planted his garden 30 yards by 8 yards to fruit trees as follows: 4 dwarf pear, 3 plum, 2 cherry, 1 dwarf apple, 20 currant bushes, 5 peach trees, 200 strawberry plants. On account of late frosts, the peach and pear were injured and yet, the yield was good, and the fruit the finest you would care to see. No worm holes or knots to be found. His yield in money was \$24.75, besides peas, beans, tomatoes and cabbage, all he could use for his family—plus a row of fine roses. He sprayed with lime and sulphur three times a year, in December, early in spring and after petals fall.



The New Outlet for American Fruit. Our cartoonist in the above illustration anticipates a new outlet for the fruits grown in the various parts of the country but particularly the northern grown fruits such as apples, by means of the new Panama canal. There can be no doubt but that this canal will bring about many changes and will doubtless cause a large demand for northern fruits. Apples do not thrive so well in the south as they do in the north. Thus I can buy in Florida two oranges for the price of one apple. The south is made up largely of people who have lived in the eastern states, who have become accustomed to eating apples, and who cannot easily break away from the apple eating habit; thus our southern states have ever furnished a good market for northern apples. It will be far easier to distribute fruits east, west and south in the coming years owing to the opening of the Panama Canal.

shiftless tramp knocks at his door on some cold, dark, stormy night. Here is a problem. The farmer dare not send him to the barn for shelter, owing to the risk of his setting the barn on fire. Neither can the farmer safely give the tramp lodgment in his home. But I have taken the risk of lodging such men on stormy nights at Green's Fruit Farm, when I was living there. But neither at our fruit farm nor at my Rochester home, have we been often annoyed. A good threatening dog is a safeguard against tramps.

### Green's Fruit Farms.

We have three farms southwest of this city. The first one contains 134 acres, the next 70 acres, the third, bought last spring, 100 acres. We have nearer the city four separate purchases, embracing in all about 50 acres; we have in or near this city about 15 acres of land. These farms cost us from \$100 to \$200 per acre.

There are houses for 17 families on the various farms, making in all quite a village. There are also extensive buildings for storage and other purposes, which must constantly be enlarged to meet our requirements.

### The Young Orchard is Something to Look Forward to Hopefully.

One of the joys of living is in being able to look forward to things not fully realized or accomplished. What is there in the business line that we can look forward to more hopefully than a promising young orchard.

with fruits of many kinds ripening at different seasons.

Therefore at the new farm, where we have begun planting orchards, I realize how much more attractive this farm will be to the two families who live there, both of whom have children, after the orchards and berry fields are well established, than before when there was no fruit upon the place except a few winter apple trees.

### The Tricked Horse.

At Green's Fruit Farm we have to have at work 20 or more horses. Every year, we have to buy a few teams or single horses. Yesterday I bought a new horse. In buying, I always feel that I am undertaking a risky job and yet on the whole, I have had pretty good luck in buying. I noticed that on approaching this new horse, he would throw back his ears and have a rather vicious look in his eyes, which I did not like, and yet the horse gave no evidence of being inclined to bite or to injure anyone.

This new horse had not been in the barn many hours before I approached with a basket of apples. The moment I opened the door, my two pet horses stuck their noses over the railing with expectant eyes, knowing well what they were to receive, for I am in the habit of giving them apples occasionally and of patting them on the head and neck. But this strange horse had no such expectations, but had his ears thrown backward suspiciously. When I offered him an apple held in my hand, he did not realize that I was attempting to do him an act of kindness, therefore did



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of Green's it growing gh one has He planted ds to fruit 3 plum, 2 ant bushes, plants. On h and pear I was good ould care to b found. 75, besides eage, all he s a row of lime and December fall.

# The Sugar-Maker's Camp.

Written for Green's Fruit Grower by F. H. Sweet, Va.

During the last days of February or early in March, when the atmosphere is still and dry, and there is a northwest wind blowing, the sugar-maker goes into camp and begins tapping his trees and setting his buckets. He is very particular about the weather, and if the wind is from the south he busies himself in putting everything in readiness in the sugar house—and waits. But just let a bright, warm day come, with a light north-west wind, and he becomes a new man. There is no slowness or lethargy about him now, and he is eager to lengthen his day as far as possible into the night, and is content to snatch an hour or so of sleep whenever and wherever he can.

The traditional sugar weather is freezing nights and thawing days, with occasional light, feathery snowfalls, known to sugar-makers as "sugar snow." If a freeze succeeds a snowstorm, the sugar-maker is happy, for then the sap will start with a spurt and run freely when the thaw that must come follows. A steady flow that will fill the buckets inside of a day is regarded as good running, although twice this amount is often obtained in exceptionally favorable weather.

Trees are tapped by boring holes into the trunks with a half-inch bit about one and one-half inches in depth, and from one to four feet above the ground. After tapping, spouts of wood or iron, fitted with hooks for holding the buckets, are driven firmly into the holes. The older growths produce the sweetest sap, while a tree under a foot in diameter is not considered large enough to tap. Buckets of wood or tin are hung on the spouts, and it is not uncommon to find as many as three or four buckets with two spouts to each hung on maples of large size. It is said that a tap on the north side of a tree will produce less sap than on the south side, and sap that runs during the day will make less and inferior sugar than the same quantity of night sap. An acre of ground should not be called upon to support more than thirty trees to be tapped for sap; and scientific sugar-makers declare that if the acreage is limited, a few trees will produce as much sap as a good many—in other words, that trees standing close together divide the aggregate flow made possible by the area of soil they cover, which aggregate would be as great if there were half as many trees draining the space.

As it comes from the tree, maple sap is like water in appearance, and with a not very pronounced sweetish flavor. It is gathered into large wooden tanks, which are placed upon sleds, and drawn usually by horses or oxen. During the gathering process these sleds are dragged through the orchards from tree to tree. When the tanks are full, they are taken to the sugar house, and the sap is spouted into a large holder or supply tank, from which it is fed into the pans or evaporators, in which the sap is reduced to syrup. A barrel of good sap will make a gallon of syrup, which is equivalent to eight pounds of hard sugar.

The modern sap evaporator makes it possible to do a great deal of sugaring in a short time. It is made of tin, copper, or galvanized iron, and the sap flowing in at one end is, by means of partitions a foot or more apart, extending nearly across the pan, made to take a zigzag course to the other end, where it is drawn off in syrup. The proper consistency to be drawn from the evaporator is about eleven pounds to the gallon, and this degree of density is reached at 219° Fahrenheit. In large orchards two men are required to do the boiling; one to keep the fire brisk and hot, and the other to watch the pan and take care of the cyrup. Not more than half an inch of sap covers the evaporator during the boiling.

The sap is never made into more than syrup in the evaporator. If wanted for hard sugar it is placed in a sugaring kettle and the boiling continued until the thermometer indicates from 232° Fahrenheit to 238°, when the mass is removed from the fire, and stirred briskly a short time to give it the proper grain. It is then poured into tin pails or cake molds, as the case may be, to harden. When cold it is removed from the molds, being then ready for market. The very best maple sugar is a light, clear, dry, glossy brown; so very light that it much resembles clarified sugar.

Vermont is one of the greatest sources of the country's maple sugar supply, and has the reputation of producing the finest quality of sugar in the market—though, for that matter, we used to have some fine sugar maples on my father's farm in Rhode Island that yielded sugar which brought us the best market price.

Vermont has very few farms that do not have a group or an orchard of rock or sugar maples somewhere on its premises; and as the sugar season comes at a period of the year when the farmer could not profitably employ his time otherwise, there are naturally a great many sugar

camp in the state. Some of the farmers only look upon sugar-making as an incident of the year's work, while other give it the study and attention necessary to its development as a large and profitable industry. The sugar orchards of Vermont vary in size from one hundred to three or four thousand trees; and occasionally there is an orchard of as many as seven or eight thousand.

## He Asks Hard Questions.

Editor of Green's Fruit Grower:—I noticed that your advertisement in the November number reads: "The Oldest Fruit Paper in the World," and I just want to say that I am one of the "oldest subscribers" of the Fruit Grower, as I have been taking it for "nigh onto thirty years."

In your reply to Roy G. in the November number you say "there is no way except by light and heat in which the moon can affect the growth of plants." Now tell me this—is there a force in the bed of the ocean which causes the water to rise above the normal surface or is there a pulling force from the moon exerted on the water to cause the tides? Assuming that you will say in reply, "yes, the moon pulls the water up," I want to ask what pulls the water up to the very top of my grape vine fastened to the eaves of my house, say fifty feet above the roots of the vine? The weight of a column of this sap is 23 pounds to the square inch, if we are to liken it to a column of water in a standard pipe. Now is there a force in the soil pushing the sap up or is the force external to the earth and is the force a pulling one rather than a pushing one?

I saw an advertisement in the journals which gardeners are supposed to read, showing two pictures of a tomato plant; one of the plants was twice as large as the companion plant, and the advertisers declared that the only difference in the conditions of their growth was that one was planted in a certain sign of the moon while the other was sown in a different sign; one dollar was necessary to get the book of instructions for it would be sent only to those who bought a packet of tomato seed at one dollar. Now was the seed seller playing on the credulity of the gardener, or is there something besides "light and heat" from the moon which really influences plant growth?

Now it stands to reason that a man cannot lift himself up from the ground simply by pulling on his own boot straps; and don't it seem to you just as true, that the moon cannot go around the earth by any other way than by a pulling force apart from itself; in other words, does it not seem fair to assume that the world exerts a force on the moon which results in the moon being compelled to go round and round the earth perpetually? If you grant that, as a whole, the earth does really exert a pulling force on the moon, will you not concede that each particle of the earth contributes its share of the pulling force; and is not vegetation a transformation of the minerals in the soil? Say, what is the ocean doing to the moon while the moon is showing what it can do in the way of a water haul? Now, Mr. Green, while we are on this moon subject, maybe you can enlighten me on a matter which has always puzzled me; when the earth, the planets and their moons are mostly on the same side of the sun, why don't they all make a rush for their final destination, which is thought to be the sun?

I saw an unusual question not long ago; the correspondent asked: "What causes clover to grow where no clover seed was sown?" The answer was easy; "No clover ever grows where clover seed was not sown." This answer started my thought machine to evolving some funny thoughts. I was tempted to keep the ball rolling by asking how the world got its first cock and hen which produced the first hatchable egg.—O-H-I-O.

Editor's Note:—I am glad to hear from this esteemed subscriber, but must concede that there are questions that I cannot answer even to my own satisfaction. Science does explain, however, how sap rises in the trees, but it requires a scientist to explain it.

A year ago the New York Society for the Prevention of Cruelty to Animals offered a prize of \$500 for the invention of the best device to protect horses from injury and suffering in the city's streets. For ten months experts have been testing models submitted by inventors from all over the world. The award has been made to Dr. George N. Kinnell, an American, for a device to be attached to the hoofs of horses to prevent slipping on wet pavements and make the drawing of heavy loads less of a strain. The horse has earned all the comfort that men can give him in his work, and the invention will have economic value as well.

October 21, 1913.

Consider Green's Fruit Grower the best magazine of its kind that I ever read.—J. M. Poyles, R. D. No. 1, Moundsville, W. Va.



## The Magic Flight of Thought

AGES ago, Thor, the champion of the Scandinavian gods, invaded Jotunheim, the land of the giants, and was challenged to feats of skill by Loki, the king.

Thor matched Thialfi, the swiftest of mortals, against Hugi in a footrace. Thrice they swept over the course, but each time Thialfi was hopelessly defeated by Loki's runner.

Loki confessed to Thor afterwards that he had deceived the god by enchantments, saying, "Hugi was my thought, and what speed can ever equal his?"

But the flight of thought is no longer a magic power of mythical beings, for the Bell

Telephone has made it a common daily experience.

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In the Bell System, the telephone lines reach throughout the country, and the thoughts of the people are carried with lightning speed in all directions, one mile, a hundred, or two thousand miles away.

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50 2nd "	O. B. Keene, Liberty, Me.	418.6	660
30 3rd "	J. L. Demeritt, Sangerville, Me.	405.5	615
25 4th "	Frank J. Hersey, Dexter, Me.	465.8	607
20 5th "	D. L. Brett, Oxford, Me.	400.	525
15 6th "	W. S. Hodges, Phillips, Me.	311.1	523
10 7th "	R. J. Martin, Rochester, Vt.	331.8	520
Gratuity.	Geo. E. Durditt, Rochester, Vt.	457.8	634

#### Southern Zone (Mass., R. I., Conn.)

		Yield in Bushels	Complete Score Facts including starch, size and cooking quality
\$100 1st Prize	A. W. Butler, Brockton, Mass.	363.1	589
50 2nd "	Jos. Howland, Taunton, Mass.	344.9	574
30 3rd "	Henry A. Wyman, Rock, Mass.	342.5	558
25 4th "	Edwin L. Lewis, Taunton, Mass.	260.2	515
20 5th "	W. C. Encicott, Danvers, Mass.	217.7	503
15 6th "	Luther Holton, N. Franklin, Ct.	183.8	450
10 7th "	Dudley P. Rogers, Danvers, Mass.	185.7	430

Send us your name for complete and instructive statement concerning the results of the contest and how these great yields of potatoes were obtained. No other fertilizer than the Stockbridge Potato Manure was used.

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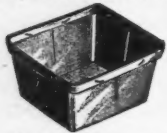
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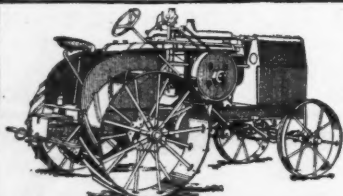
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Berlin Heights, Ohio.



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HUBER "FIFTEEN-THIRTY"

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Full details by asking the makers.

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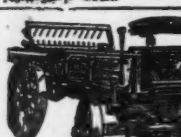
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You have to handle your big farm gate a dozen times a day. Why bother with a heavy, saggy, back-straining, rickety old wooden gate that gets snow bound in winter, mud bound in spring and summer, and soon falls to pieces?

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## Answers to Inquiries.

### Nut Inquiry.

Mr. C. A. Green:—I enclose \$1.00 for three years' subscription to the Fruit Grower and the premium of four English walnuts. About how long before they will bear fruit? I have an English walnut tree seven years old which blossoms every year but the blossoms fall off. Can you advise me what is the trouble? I also have a butternut tree of the same age which never fruits.—Chas. W. Bennett, Mass.

Reply: I answer hundreds of questions like the above asking why certain trees do not bear fruit. No person, no, not even a senator, a congressman, or the President of the United States, could answer this question positively. Possibly the nut trees are not bisexual. I have a Spanish chestnut tree at Green's Fruit Farm which never bears any chestnuts since it is standing alone. If it were near my grove of sweet chestnuts it would probably bear fruit. Every year it blossoms and sets what looks like fruit, the burrs, but there is no meat in the nuts. But possibly your trees will bear when they are older. Seven years is not old for a nut tree.

### Wants to Buy Farm.

My Dear Mr. Green:—I want to plant a row of dwarf pear trees such as you suggest for a hedge boundary. Your paper has aroused my enthusiasm for a fruit orchard. I know very little about the growing of fruits except in my home garden, where my pear trees and cherry trees and quince trees have thrived in spite of lack of attention.

I should like to get a place of about 100 acres and use at least 10 as a fruit farm. Can you recommend the best locality within two hours of New York City? What quality of soil is best for the production of large apples? I should like to get a place where there are some large fruit trees now. I could then add about five acres of small trees but not have to wait so long for results. Any suggestions which you can make will be appreciated. I might add that all fruit trees that I purchased from you are thriving even on our poor Long Island sandy soil. The 100 poplars you sent me are all living even though planted in soil that was recently filled from Jamaica Bay.

In the event of my starting an orchard what seasons will it require my presence on the farm? Could one man properly care for an orchard of ten acres?—William S. Pettit, N. Y.

Reply: Not only can pear trees be grown in the form of a hedge, but cherries, peaches, plums, apples and many other fruits can be grown that way, providing there is plenty of room on either side of the hedge row for sunshine, ventilation and root growth. At Green's Fruit Farm we have apple trees in hedge rows that are bearing profusely. They can be planted from 3 to 8 feet or 10 feet apart and are of great interest and a beautiful look upon. Can you imagine anything more beautiful than a row of cherry trees planted 4 feet apart of the Montmorency variety, the tops sheared back something like a hedge each year. You would find people coming for miles to see the beautiful sight these trees would present with their fruit or their beautiful blossoms.

The soil about Marlboro and many other points along the Hudson River is famous for fruit growing. A. J. Caywood at Marlboro, had a delightful fruit farm which possibly can be bought now, at Marlboro. I do not know much about Long Island but assume it is sandy and needs lots of fertilizer, but a farm there might be a good investment.

Your presence on the fruit farm that you think of owning will be most needed when the fruit is ready to be picked, packed, and sold. An interesting question at present is, will it pay to plant apples of high quality such as Banana, McIntosh Red, Wealthy, Jonathan and Winesap: some of the varieties not being so productive as the more popular but inferior Baldwin.

### Cut Worms.

Green's Fruit Grower:—I have been a subscriber to your paper about ten years, and I like it. I am more in need of it now than in the past, as I have bought 33 acres and wish to grow fruit and berries, but before I can do so, I will have to get rid of, or destroy the so-called cut ant, (or night worker). What is the best and cheapest way of destroying them?—C. E. Lutz, Tex.

Reply: I do not know the insect mentioned by the name of cut ant. We have on some of the sandy soils in New York state, cut worms, and wire worms, which are destroyed with difficulty. We are obliged to plow the soil just before winter sets in thus exposing and destroying large numbers, but this will not destroy all the destructive worms.

During the growing season we have attempted poisoning them by mixing Paris green with bran but this is only partially effective. At present we simply avoid planting the fruits, or crops that are eaten by these worms, which do the most injury to peach seedlings which they devour, utterly causing us the loss of thousands of dollars. I advise you to write the United States Agricultural Department at Washington, D. C.

Woolly Aphis:—Mr. C. B. Avery, I advise you to write the state experimental station at Geneva, N. Y. The white substance may be the woolly aphis, if so it should be attacked at once, as the Geneva Station may direct.

Kerosene emulsion is a remedy or any oily wash.

### Farming for a Railroad Man.

Mr. C. A. Green:—I am thinking of buying a farm about 25 miles northwest of Portsmouth, Ohio. Land is cheap here and is said to be good soil with fairly good improvements, water, etc. I am 33 years old, have done some farming and understand the work. At present am employed on the railroad, am making a good living salary, but you know what chances a railroad man takes. He is also exposed to all kinds of weather. I know farming is hard work and I do not expect to make a fortune at it, but I wish to raise some truck, stock, chickens, etc., on a small scale on 50 or 75 acres. How much land can one man and one horse tend to to raise feed for about six head of stock and chickens?—H. B. Hood, Kentucky.

Reply: Your question is unanswerable. No one can tell how much work one man can do, for so much depends upon his executive ability and his economy of time, the nature and fertility of the soil, etc. One man might find employment on one acre. Differently worked he could tend to ten acres. I have known men to do a large portion of the work on 100 acres by hiring a day laborer during haying or harvest, but this is attempting too much.

### Wants Advice About Farms.

Adolph Hanselman, N. C., is a subscriber of Green's Fruit Grower and wants the editor to advise what the apple prospect is in Purcellville, Va. Is the soil O. K. for apple growing if so, what varieties? Has heard of a party who intends setting out a couple hundred acres in apples. The land that is not cultivated is in blue grass—would like your idea about its being adaptable to fruit.

Reply: Green's Fruit Grower receives many letters like the above which assumes that our editor is familiar with almost

every farm in every state, which is impossible. Our editor was never at or near Purcellville, Virginia, nor thousands of other villages in the various states. There is much good and much poor soil in every state. Some parts of Virginia are adapted to apple growing and some are not. The fact that some one is planting 200 acres of apples in that locality is a good indication.

These letters that we receive indicate that people are disposed to buy land without having seen it. Such acts as these are being committed every year by people in various parts of the country. We know of men and women in California buying land in Florida that they have never seen. They do not know whether this is swampy land utterly without value or whether it is lacking utterly in fertility.

The buying of a farm is a serious undertaking. It is almost as serious as selecting a wife. If you buy a poor farm you will find difficulty in selling it. The time you spent on it in attempting to make it productive and improving the buildings will be likely to prove wasted.

### Cutting the Roots of Apple Trees in Order to Make the Trees Bear Fruit Earlier.

Mr. T. Kanannough of Ohio asks Green's Fruit Grower for information in regard to cutting or disturbing the roots of the Belleflower or other apple trees in order to bring them into early bearing.

Reply: I have not done any cutting of the kind alluded to. I have been a planter of fruit trees nearly all my life, which has been a long one, and in all that time I have never had occasion to hasten the bearing of fruit trees. The fruit trees I have planted have always come into bearing at a reasonably early age. Many of these trees have surprised me by their early fruiting.

It is a fact however, that when calamity occurs to a tree, that is when its bark is gnawed by mice or rabbits, or when disease has attacked the tree, or when its roots have been shattered by deep plowing or other means, the growth of the tree was retarded and this unfortunate tree was brought into immediate bearing. Such facts are usually seen more in apple trees than in other trees. But on one occasion a large cherry tree on my place, over 50 years old, was stricken with some disease and was eventually about to perish. The last time I saw that tree in fruit it was bearing the most marvelous load of cherries I ever saw on the tree. It seems with this experience that nature has implanted into plants, vines and trees a tendency to reproduce themselves which is strengthening when the trees approach their last days.

I would advise those having trees that do not come into bearing early enough to withhold cultivation and to lessen the application of fertilizer, since the rapid growing tree is not nearly so apt to bear a crop of fruit as a tree growing more slowly.

Grape Vine Pruning.—James Collins of Oregon asks Green's Fruit Grower which is the best month for pruning grape vines and how they should be pruned.

Reply: Grape vines can be pruned at any time of the year after the leaves have fallen in the fall and before the buds have opened in the spring. The grape vines in my fruit garden at Rochester, N. Y. were pruned this year in October, but they might have been pruned in November, December, February or March. All of the young wood, that is the growth of last season, should be cut back within two or three buds of the old cane, from which they spring, with the exception of here and there where a long shoot of the new vine should be left to cover a trellis or arbor. In trimming vineyards there are seldom any long new canes left, all being cut back to three buds. Some times it is best to cut out a few of the old canes entirely, thus giving the vines an opportunity to renew themselves, but if nothing more is done than to cut back the new growth to within three eyes of the old wood no more may be absolutely necessary.

### Have You Heard?

This one: The new parson went to call on Aunt Minnie, dear and charming old lady, aged ninety-three. Said he: "My dear friend, I find myself much impressed with your placid outlook, after a life so long that it would have bowed most of us half to the ground. Tell me, will you not, what it is that has supported and renewed you through all these years; what it is that has been your standby and comfort, what your sustenance and source of strength? Tell me, won't you?" "Victuals," said the dear old lady, charmingly.—New York Post.

November, 1913.

I always find Green's Fruit Grower a most interesting and instructive farm paper.—D. I. Baker, 326 Congress St., Boston, Mass.



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Stick Till the Game is Played Out.  
Written for Green's Fruit Grower by Charles  
H. Meiers.

If you're playing for amusement in some game,  
Or if up against it in a hard, fierce bout,  
Though you seem to be outclassed, fight just the same,  
Stick! Keep right on trying till the game's played  
out!

If you're playing in a little game of love  
And your rival has you almost put to rout,  
Don't give up until the lady tells you of  
His success—just stick; and you may yet win out.

If you're striving for success in life, and find  
That the outcome of your toil is still in doubt  
After years of earnest labor, never mind—  
Stick! Fight!—Never quit until the game's played  
out!

#### Electricity on the Farm.

Written for Green's Fruit Grower by  
Alvah H. Pulver, N. Y.

The last few years have brought wonder-  
ful changes in the methods of farm man-  
agement. The advent of electricity on  
the farm has brought a conveni nce to  
the farmer and a comfort to the family  
not thought attainable only a few years  
ago. With the presto of the button  
enough is accomplished now to make the  
wizardry of the old magicians seem like  
child's play. Responding to this gentle  
press, dark rooms are filled with brilliancy,  
water is pumped, -hurn day is cared for  
without a burden of labor, vacuum  
cleaners, washing machines, sewing ma-  
chines and many other contrivances are  
operated for the greater comfort of the  
housewife, while at the barn the utiliza-  
tion of this unseen force is contributing  
to the lightening of many arduous tasks.

There are two methods by which elec-  
tricity is introduced into the farm home:  
Through the employment of storage  
batteries and through proximity to some  
distributing line feeding from a source  
where electric power is developed in  
enormous quantity. In our section con-  
sisting of the counties skirting Lake  
Ontario, we are connected with the mam-  
moth power plants at Niagara Falls and  
from this gigantic source is furnished the  
current for lighting many cities and towns  
and leaving an abundance of power for  
the movement of all the street car systems  
within an area embracing much of western  
New York. This means that all the towns  
between Oswego and Niagara Falls have  
the current generated at the Falls on an  
"all day service." To get the benefit  
of this system one needs to reside in close  
proximity to the line, although there are  
instance where to connect a group of  
large farms a special line has been con-  
structed from the main line. This prac-  
tice has not yet found general application  
in this section owing to the cost of instal-  
ling the side line. However a large and  
constantly increasing number of farmers  
and orchardists in Wayne, Monroe,  
Orleans and Niagara counties are being  
connected for the service.

The other system of using electricity  
on the farm, by means of the storage  
battery, is more elastic in that it can be  
applied anywhere. It has only been  
within the past few years that batteries  
of this construction have been perfected  
to the point where they could be adopted  
on the farm. The storage system is a  
low-voltage system. The equipments are  
known as 24-volt, 30-volt, 35-volt, etc.,  
while the service received here calls for  
from 110 to 125 volts.

The gasoline or kerosene engine in use  
on the farm will serve adequately as the  
power plant on the farm lighting plant.  
The equipment needed will be the dynamo,  
batteries and switchboard with the wiring  
connections for house and barn. The  
batteries are charged from day to day by  
connecting the dynamo with the engine.  
Usually about two hours a day will make  
a sufficient run for the engine to store up  
all the current needed, even for the  
winter's shortest days. In summer time  
the batteries will not require recharging  
often than twice a week.

The lighting units in the storage  
battery system are determined by the  
number of lamps that the batteries can  
render incandescent at once. One able  
to maintain eighteen lights simultaneously  
is an eighteen unit system. This, how-  
ever, does not dictate that not more than  
this number of lamps shall be installed  
with the system. It merely determines how  
many may be operated at once. On occa-  
sions where a protracted use of all the  
service is required it will be necessary to  
maintain the service on the dynamo, when  
a few extra lights beyond the unit strength  
may be used.

Tungsten lamps are well adapted to  
low voltage systems. They are made  
much stronger for all battery systems and  
give longer service. The good things in  
electricity are just coming on. The old  
carbon lamp was thought a wonder in its  
day but the improved ones are immeas-  
urably superior. Other new ideas are  
coming into adoption, but the time is  
already here when the farmer may have  
the benefits of electricity at his command.  
May its use spread to the farms of our  
land. The mystery and subtlety of this  
force will have its challenge met in the  
boys of the farm. They will here find a  
new charm and perhaps unrealized bene-

fits will accrue from the awakening of  
some boy who delves into this most  
fascinating study.

#### Cannot Sell New Apples in Antede- luvian Village.

The Montreal Sun tells of the Canadian  
farmer, who brought into a Canadian  
village, a few barrels of large, beautiful and  
delicious Banana apples, but could not sell  
them at the full prices paid for Baldwin,  
owing to the claim of the village grocers  
that people were not acquainted with the  
Banana and therefore would prefer the  
Baldwin and Greening, which they were  
familiar with, but which were not so  
handsome nor so good in quality as Banana  
apple.

This statement staggers me and leads  
me to suspect that the grocers in this  
Canadian village must be far behind the  
times. Those villagers who are spoken of  
as buying only well known varieties must  
also be far behind the times. Such con-  
ditions do not prevail in Rochester or in  
the other large cities of this country. I  
have seen at the grocery annex of one of  
our largest department stores at Rochester  
N. Y., repeated displays of Wealthy  
apples offered in small peach baskets at  
75 cents per basket. These apples were  
selling rapidly. Fresh supplies were  
ordered almost daily to keep pace with  
the demand, and yet Wealthy apple is as  
new a variety as Banana. Wealthy apple  
is not more known to our consumers of  
apples at Rochester than is Banana apple  
to the Canadian buyers. Our consumers  
did not buy the Wealthy apple because  
they knew about its qualifications, but for  
the reason that they were pleased with its  
beauty. Then when they used the Wealthy  
they liked its quality. It is attractiveness  
in appearance of most fruits that sells  
them. The question of their being new  
varieties or old varieties does not enter  
largely into the question of sale.

Rare varieties of apples are grown in  
Oregon and other western fruit growing  
sections and are sent east in carload lots  
or trainload lots and sold readily at fancy  
prices to people who never saw such  
varieties before and who did not buy these  
varieties because they had acquaintance  
with them, but because they were attrac-  
tive in appearance. I found in most in-  
stances the retailers of these Oregon apples  
did not know what varieties they were  
selling, but were simply selling them under  
the name of Oregon apples. The varieties  
represented are usually Winesap, Banana,  
Stayman's Winesap, Jonathan, Delicious,  
Gano, Grimes Golden, Mammoth Black  
Twig and Rome Beauty.

It is a pity that the buyers of these  
apples are not better acquainted with the  
varieties offered and sold, so as to be able to  
distinguish between those varieties of high  
quality and those of poor quality. On  
account of their ignorance on this sub-  
ject, many city people continue to buy the  
handsomest apples, the highly colored  
apples, without knowing one variety from  
another, therefore often find upon their  
tables the Ben Davis apple, which is of  
poor quality.

Apple buyers on the Liverpool, England,  
market appear to know a good thing  
when they see it. I refer to a clipping from  
a reliable report showing the sales of  
American apples. This special shipment  
consisted of a considerable number of  
barrels of Baldwins and other leading  
commercial varieties, which sold under  
the hammer at \$3.70 per barrel, and of a lot  
of boxes of Winter Banana and Newtown  
which sold at \$3.40 per box. The weight  
of the barrel was 150 pounds and the  
weight of the boxes 40 pounds each. This  
speaks well for the producing of high  
quality showy fruit and the box as a  
package.—C. A. Green.

#### Sewage Dangers.

While sewage properly managed may  
be safely and properly used on the farm  
for growing fruits or grain, I wish to issue  
a note of warning against using sewage in  
any of its forms for the growing of celery,  
lettuce or other similar garden products  
which are eaten in the raw state. For  
typhoid germs and the germs of other  
diseases may be communicated through  
these plants, which are eaten without  
being cooked. These disease germs may  
be communicated by fertilizing an orchard  
with sewage also. Possibly by applying  
sewage fertilizer to potato fields, but as  
potatoes are cooked there is less danger  
in potatoes than in anything else I have  
mentioned.

#### Value of a Hobby.

It is wise to have a hobby, says Mil-  
waukee Journal. It may be provocative  
of laughter, but never mind. Your  
hobby is good for you, however silly  
another may think it. It is good to have  
something to keep enthusiasm alive. It  
matters little what your hobby may be,  
so it is respectable and holds interest for  
you. There must be something to take  
pleasure in, to keep the youthful spirit  
alive. Monotony and dullness of life  
hasten old age. Get a hobby and nourish  
it.

## Forkner Orchard Cultivator



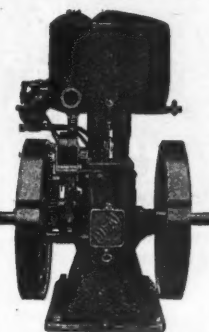
LIGHT DRAFT HARROW CO., 600 Nevada Street, Marshalltown, Iowa

Does more work with less draft and leaves a  
better surface mulch than any other cultivator made.

It Works Right Up To Your Trees

Cultivating the entire surface beneath low branches  
without disturbing boughs or fruit. Write for cata-  
logue and free book "Modern Orchard Tillage."

## THE IMPROVED IDEAL ENGINE



Did you ever stop and think that a sprayer is  
a combination pump and engine? You can get  
the best pump but if your engine balks you have  
a poor outfit. **The Improved Ideal Engine**  
is a guarantee of constant reliable power; it will  
run on the hill side and over rough ground with-  
out loss of power; it was designed for sprayers and  
other portable machinery. **It is light weight  
for the power delivered, free from vibra-  
tion, frost proof, dirt proof and fool proof.**

You should investigate Ideal Power for your  
sprayer by getting our catalog, which tells you  
about the improvements we have made in the  
Ideal engine. It is yours for the asking.

## THE ORIGINAL GAS ENGINE CO.,

R. E. Olds, Chairman,

550 E. Kalamazoo St.

LANSING MICH.

## THE GASPORT TRACTOR

The Leader in the Light Tractor Class



#### THE REASONS ARE CLEAR:

It is the first successful light tractor demon-  
strated by five years of steady development.

Strength has not been sacrificed to give light-  
ness as in many machines but is as light as  
consistent, with its contained power, durability is  
the prime factor.

Great rigidity of frame construction, embodying  
three point suspension, no twisting of frame  
possible.

A machine which is simplicity itself, not a single  
freakish idea embodied anywhere. Handles as  
easily as an automobile;

No combination of clutches and levers to man-  
ipulate in order to go ahead or back up. One

lever does it all, three speeds ahead and the same  
three reverse.

This machine will handle 50% quicker and 100%  
easier than any other machine made.

All wearing parts thoroughly protected from  
dust and dirt.

Cu. steel gears running in oil tight case.

Built low to go under trees. Short Wheelbase  
enabling it to turn easily on ordinary head lands.

Handles easily three to four plows, depending  
on ground conditions.

A machine for service and high efficiency  
The Gasport Tractor is well worth knowing  
about.

Write for Catalogue No. 106

ORCHARD MACHINERY MFG. CO., - - Gasport, N. Y.

ONE TON = TWENTY  
WIZARD WAGON LOADS  
SHEEP BRAND Barn Yard Manure

If you could free barnyard manure  
from all refuse and waste matter, destroy all germs and weed  
seeds, evaporate the moisture, pulverize it finely and concentrate  
it so that one bag would equal a whole wagon load of ordinary  
manure, wouldn't you prefer it to the raw material? This is what  
you get in

**WIZARD**  
BRAND  
Sheep Manure

It is the richest manure from Western feeding stations, where millions of  
sheep are grain fed for market. By special processes it is converted into a  
highly concentrated, rich manure, the most effective, economical and con-  
veniently handled fertilizer obtainable.

Whatever you raise, fruit, vegetables, grain, grass or flowers, Wizard Brand  
Sheep Manure makes them grow. It contains not only natural plant food  
but humus—the organic matter which builds up soil and renders available  
dormant soil fertility.

Give your soil a dressing of Wizard Brand Sheep Manure and see how  
it will "make Nature hustle" for you this spring.

Write today for prices and freight rates on  
from one bag to a carload.

The Pulverized  
Manure Company  
27 Union  
Stock Yards  
Chicago





# IT PAYS TO SPRAY WITH A MYERS SPRAYING OUTFIT



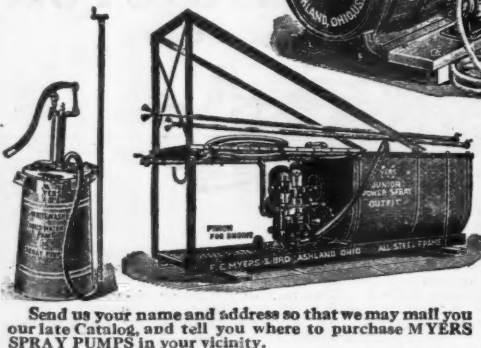
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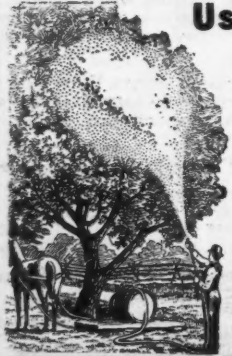
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### A Song of the Seasons.

Written for Green's Fruit Grower by Marvin L. Flyer.

Sing a song of Winter,  
Heavy snow and ice;  
Lots of fun in coasting  
When the crust is nice.  
Sitting by the hearthstone  
With its warmth and glow,  
Reading, writing, looking  
At the falling snow.  
Many joys hath Winter,  
For the young and old;  
With its sports and pastimes,  
And its bracing cold.

Sing a song of Springtime,  
Gladness everywhere;  
Fields and forests blooming  
With flowers bright and fair.  
Tender blades are springing  
O'er the sunny leas;  
Little birds are singing  
In the leafing trees.  
Richest joys hath Springtime,  
For the young and old,  
For its light and beauty  
Are worth more than gold.

Sing a song of Summer,  
Beauty everywhere;  
Wealth in field and garden  
Which the household share.  
Pleasures by the lakeside,  
Where the wood nymph dreams,  
Bathing, boating, fishing  
In the crystal streams.  
Thousand joys hath Summer,  
For the young and old;  
For its wealth and pleasures  
Never can be told.

Sing a song of Autumn,  
Splendor everywhere;  
Crowning hills and mountains  
Where the forests are.  
Fruits of field and orchard  
Filling box and bin;  
Gladning hearts of toilers  
When they're gathered in.  
Give praise to the Giver,  
All ye young and old,  
For the wealth of Autumn  
Never can be told.

### Successful Surgery of Mice Girdled Trees.

Written for Green's Fruit Grower by John E. Taylor, Maine.

On the farm of J. W. Manson in Somerset County, Maine, has probably been done the most successful bridge grafting in a young orchard that has been accomplished in Maine. About two years ago, Mr. Manson on going into his orchard, found that his young orchard had been girdled by the mice beyond what seemed



Tree girdled by mice saved by grafting.

recovery. He gave the trees up as a complete loss. After about a week, Charles Smith an orchardist who had had experience at the Maine Experiment Farm at Monmouth, went to the orchard and said he believed that the orchard could be saved. He immediately proceeded to bridge graft all of the trees.

These trees had been so completely girdled that from five to six inches from the ground up the trunk of the tree, there was no bark whatever and the wood of the trees in many cases had been gnawed into. He took some live branches from other trees for scions and in the natural method of grafting put one end into the foot of the tree near the main root and the other end to the top of the girdled part. He did this on either side of the tree and left them to work their course. It has now been two years. Only about three of the trees died after the process and in every case where they lived the trees this year are bearing apples, they being of the Baldwin variety.

### Where the Winter Birds Sleep.

Editor of Green's Fruit Grower:—Night comes with a silent swiftness out in the woods these winter days and it is interesting to note the various roosting places of the birds at this season of the year. Winter nights are often cold and the make-shifts of the jays, owls, snow-sparrows, tipsnitchers, redbirds, and the rest of the feathered tribe who spend this period with us is interesting and even amusing at times.

I have often watched some jays at a distance to discover their sleeping quarters, but one evening I chanced to catch about every genus, family, and species of winter birds at their bedtime.

It was just after sundown in that quick twilight of a winter's evening and a light snow covered the ground which lent an added distinctiveness to everything. I

was in a thicket on the other side of Deere Creek hunting. The weeds and wild briars have run riot over this old cut over piece of ground for many years thus making it an ideal feeding place for many birds at this time of year. I had always suspected the hollow snags and tree tops made good beds for many of them.

I had tramped over most of the clearing without result and was returning by the cut-across path which leads up by the old sheep shed. A small pine squirrel and jay were noisily berating each other in a snag close by this and being in no rush to get home I decided to stop a moment and learn the cause of the disturbance. The quarrel lasted for some moments then the squirrel whisked down the side of the stump and disappeared in a clump of brush nearby. The jay upon his disappearance flew immediately to the top of a nearby bush and uttered three loud calls which sounded like "peer-o-lee, peer-o-lee peer-o-lunk," as much as to say "the squirrel has now gone and we are ready to bunk." Soon another jay made its appearance, undoubtedly the mate of the first and after a few low remarks in jaysese they flew up to the hole vacated by the squirrel and disappeared.

A small band of snowbirds were twittering together in a clump of briars over to one side of the path, but these soon vanished in a pile of brush. I then observed two yellow hammers perched on the bare limb of an ash tree over across the woods. Suddenly an owl made his appearance from some unseen crevasse in its top, perched himself a moment near the two hammers, then glided noiselessly off into the fast gathering gloom. Plainly it was the hammers' bedtime for they soon disappeared into the decayed top.

I was thinking of pursuing my way homeward when the low twink, twink, twink, twer-o-lee, twink, from the leader of a bevy of quail drew my attention to the lower part of the thicket. They were coming directly toward the shack in which I was standing. Hastily concealing myself I awaited their near approach. They passed within three feet of the doorway, scudding over the slightly crusted snow like so many brown bits of feathered life that they were. They circled off down into the bottom land nearer the creek and there collected under a bunch of weeds for the night. One, evidently the leader of the bevy, flew to a low shrub near their roosting place and proceeded to give the world the benefit of his evening song of thanksgiving for the light and joy of another day safely passed in the hollow of God's hand.—W. L. Haisley.

### The Road to Happiness.

Editor of Green's Fruit Grower:—With the hours of daylight now about down to the minimum, the increasing duration of moonlight evenings affords some compensation for the withdrawal of the sun's presence and the genial warmth of its rays. A shortened day balanced by a moonlight evening is to many an evidence of divine thoughtfulness for the adding of cheer to the children of men. It is hard to abandon, even temporarily, the atmosphere of summer. With it are so closely associated the song and chatter of the winged tribe, the afternoon spent at the water's edge and the evening on the front porch, where, snugly cushioned in the Bagley rocker, with relatives from a distance home on their vacation, we were prone to live over the days that are now behind us. These are moments of keenest relish.

With the bleak days at hand, beckoning straight to winter, a new grouping of thought forces is at work. Some changes and adaptations are necessary. We hesitate, for we have long since almost lost the down from our bodies, but nature, by gradually building up to the winter stage and by brief respites in open weather, trains us for the big change to another zone. With the sun three million miles nearer than in summer, we really feel farther away from it, as in its oblique course it cuts a shorter arc over the horizon. The moon, as if to supplement the lord of the day, careers high in the heavens in prolonged effusion of delightful, silvery reflection. Only the Harvest and Hunter's moon are rivals to its brilliancy. And when those long evenings are here, when we are settled to winter and declare for the observance of its institutions, there is a new delight in winter for every tenant within its embrace. Nature takes to slumber and recuperation. Man is rested from his heaviest labors on the farm, and if he will only look about him he will find innumerable opportunities for joy and contentment in the "dead of winter." A family that is at peace with itself is already well on the way to happiness and contentment.—Alvah H. Fulver, Sodas, N. Y.

Why not plant some ornamental trees and shrubs around the home place this winter. A few days and dollars devoted to this work will make your place look 50 per cent. more attractive by the middle of next summer.



## Helping the "Farmless Farmer."

Written for Green's Fruit Grower by  
J. S. Underwood, Ill.

It seems to me that the problem of the tenant, or the "farmless farmer," is a subject not discussed enough. One often hears the expression "shiftless and undesirable tenant," but from personal observation I can say emphatically that the poor, much maligned renter does not possess all the shortcomings by any means. Mr. Lan'lord more often than not has a long list of undesirable qualities attached to his pompous personality, not the least of which is unreasonable greed and stinginess.

To begin with, most farms for rent are in a deplorable condition of unrepair as to buildings, and conspicuous for the lack of conveniences. One renter with whom I am personally acquainted lives in a little old house with cracks in the floor and walls, with the stairway a mere ladder on the outside, with no cellar, no decent water and practically no barn. Yet there are good, roomy hen houses and a fine cement brooder house. The orchard on the place is kept in fine condition. Yes, indeed, everything is fixed up snug as you please for the chickens, and the orchard is kept in a high state of production, for the landlord gets half of all the eggs, poultry and fruit produced.

I know that some tenants are lazy and shiftless, and I am not making any plea for them, but I would urge the providing of better houses and more conveniences for the wide-awake, hustling class of renters who work hard and take care of a place. I know a landlord that owns three large farms, and yet seems never satisfied unless he is getting his over-worked tenants to do a lot of gratis work for him, work that adds materially to the value of his farms. Now the landlord who exacts value received for everything a tenant gets and expects that tenant to be liberal in the matter of free labor, is going to have trouble in keeping a tenant worth while.

Landlords should provide suitable buildings and neat, comfortable houses—thereby winning the approbation of the woman right on the start—and treat the renter with at least a part of the consideration they would desire were their positions reversed. Nine times out of ten they will be repaid several fold. For tenants are very human and quite capable of appreciating kindness. Better spend a little money on pleasing improvements in order to retain an intelligent, ambitious, enterprising tenant than to be changing every year.

## The Value of Kindness.

The value of kindness to animals can scarcely be estimated in money, yet it is true that kindness does pay a decided profit to the stock owner who knows how

to practice it among his creatures. Any intelligent stock owner will tell you that the above is true, says Practical Farmer. We attempt to prove the truth of our statement by the intelligent man to convince the "doubting Thomas" that it is a matter of vital importance to his success as a stock owner. We appeal to your own reason, reader. Docility and gentleness of the farm animal are worth considering first, as their usefulness to you; second, as your ease in handling them; and third, as the profit they return you. Their docility and gentleness depend largely on your treatment of them. The more docile and gentle the horse the more useful he is to you and the easier you can handle him. The same is true of the cow or any other farm animal. The more useful an animal is to you and the easier handled, the greater the profit is going to be. See!

In the days of King Charles II, news traveled slowly in England, and before the people of Cornwall knew about the terrible plague in London there came to Bodwin itinerant traders with pack mules laden with silk and satin gowns, rich robes, plumed hats and expensive prices. The countryside rushed to purchase and the merchants, having disposed of all their stock, departed. Then within a day or two the purchasers were attacked by a strange sickness, and died by scores. The gaudy clothes had been stripped from the bodies of those who had died of plague in London.

## Abuse of Fertilizers.

Hal B. Fullerton of the Long Island experiment farms, in answer to the question, "Aren't you ever going to use fertilizer?" discourses as follows on the use of commercial fertilizers:

"Bless your souls, yes. Didn't I use fertilizer when I plowed that rye under? Next fall I am going to put on about ten tons to the acre of manure again, and I am going to turn under crimson clover, vetch and rye on every square foot I can get planted.

"Then I shall use lime for a sweetener, for we now can afford the lime a little time to work. Next summer when I am putting in a second and third crop on the same ground I shall probably use blood and bone meal.

"Don't misunderstand me. I think chemical fertilizers are bulky for old, wornout land, but it would be like 'carrying coals to Newcastle' to put them on virgin soil.

"The craze for chemical fertilizer has gone too far. There are places where they have put it on so heavy (with the theory that if one ton is good two tons will be better) that they have chemical laboratories, not farms. All chemical fertilizer is 'lazy man's way.'



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### Spraying Neglected Trees and Grape Vines.

We purchased the farm where we now reside, last January. That was too late for the fall spraying and cleaning up in general in the orchard, says Mrs. Ella M. Tyler in The Practical Farmer. Great drifts of snow lay all through the orchard until late in March. It was the hardest winter I have ever known in Kansas. As soon as possible our men were out to look over the prospect for fruit. It certainly was not very promising. There were a few old apples, peach and cherry trees, but they reminded one of a child grown up on the street, with no loving hand to train him up into a beautiful character. They were sadly neglected. The young trees were so badly set, they looked scarcely worth spending time on. The grape vines, like everything else, needed a careful hand. If we had been here in early autumn to clean up and burn all dead, diseased and discarded wood, then sprayed thoroughly with Scalecide, then with whale oil soap solution, then again just before the hard winter weather set in, with a lime-sulphur mixture, we might have seen much greater results with the trees. As it was, the severe cold weather prevented the first spring spraying, about the first of March. The first spraying came two weeks later, then when the buds began to swell and again when ready to burst into bloom. We use for these sprayings Bordeaux mixture with either Paris green or arsenate of lead. Just before the blossom petals fall, we use the Bordeaux without the poisons added. Two weeks later we use the same. After that we think once a month often enough until the crop is made. The man we bought of, said that in the four years he lived here, those apple trees never bore to speak of. We did not wonder at that. The past season saw the trees quite full of fairly good fruit, but the trees show lack of sufficient nourishment. But few of the peaches had life enough to be worth anything but stovewood. The cherries gave fairly good results for the work put on them. The grapes were a problem. No amount of spray with poisons would destroy the rot bug. I read a few days ago of the work in an eastern experiment station, how one man discovered that the bugs need a little coaxing to induce them to eat the poison. So he added molasses to the mixture. That did the work. Now I think we should all benefit by his experience. We use the Hurst sprayer with the 4-row potato attachment. This we find valuable in the garden as well as the potato patch. On the tree trunks we use a wash made of soft soap, soft water with washing soda and crude carbolic acid, in proportion as follows: One pint of soap to one gallon of water, thicken to consistency of paint with washing soda, then add perhaps one-half to two-thirds gill of carbolic acid. This prevents the tree borers from getting started in the body of the trees.

### Fruit for High Altitudes.

C. A. Green:—We have just moved for permanent residence to a farm in the foothills at an elevation of 7000 feet. Although this is a very old place there are no fruit trees on it and only a few old gooseberries. We wish to put out some fruit each year as we can not afford much at a time. We want only enough fruit for family use as we are 35 miles by wagon road from Pueblo although Beulah, six miles away, offers a fairly good market for the summer colony. What kind of apple, cherry, plum and pear would do well at this elevation, also what strawberry, raspberry and blackberry? We have frosts as late as May 25 and again in September.—Mrs. Fred Wager, Colo.

Reply: The altitude of 7000 feet is very high for growing fruits well and regularly but I have seen orchards at Salida, Colorado, which is not far from Beulah and at the same elevation.

The early and late frosts are quite certain to cut the crops short at times and it would not be advisable to try to do more than grow what is needed for home use and nearby market. Almost any of the ordinary varieties of the apple, pear, plum and the berries will succeed there but grapes, peaches and cherries are not suitable. The wise plan is to go to the nearest fruit farms and see what they grow to the best advantage. There are plenty of them about Canyon City and Pueblo.

### Winter Orchard Work.

Editor of Green's Fruit Grower:—There is an old saying "If the sun shines in the orchard on Christmas morning there will be few apples." If the Christmas of 1913 determines the fruit crop for next year we may look for bountiful crops of fruit for next year. In any event it is not too early to prepare for it, during such mild weather as has been up to the present time much of the Spring orchard work can be eliminated.

Plowing, spraying, and pruning can be done at any time during winter months when the ground or wood is not frozen, and work that may be neglected in the Spring, or requiring extra help can easily be done now.

Plowing is essential particularly in young orchards, and if not done during winter months it should be done as soon as the ground is dry enough in the Spring. Plow right up close to the trees establishing a deep root system so hoed crops can be grown for the first few years. It improves the mechanical condition of the soil, admits oxygen to the roots, makes plant food available, and the most important of all increases the water holding capacity of the soil thousands of gallons over unplowed orchards.

This is of exceeding importance, especially in young orchards when wood growth is desired. If plowing is neglected until after the Spring rains the capillary attraction is not so readily established, while in plowed orchards the water holding capacity can be continually increased by frequent cultivation.

If vegetable humus legumeous crops, or manure are turned under an application of lime, super-phosphate, or Thomas slag can be profitably applied a few months before the growing season, around the trees.

Spraying for scale insects can be done at any time when the temperature is above freezing. This work is often neglected during the rush of spring work, and while the fungicidal value of the lime sulphur wash is lost it is better done now than not at all. Spray when there is no indication of rain or immediately afterward. If the spray freezes before it dries it will readily wash off by immediate rains. Once it is dried on the bark it is adhesive so that light rains will not reduce its efficiency so much.

Badly infested trees should be sprayed now, and again in the Spring. Do not depend on the lady beetle, or other natural enemy to eradicate the scale. While the ravages of the San Jose scale are a conquered enemy with many orchardists, continued applications are necessary in infested orchards. Prepare your concentrated lime-sulphur solution now at your convenience. Buy a good hydrometer and you are ready for business any time during favorable weather.

Pruning especially for wood growth can be done any time during winter when the wood is not frozen. It is an orchard operation requiring more good judgment than can be acquired by little thought, observation, or training. Pruning young trees like educating children destined their future development and usefulness.

I may sound somewhat absurd but there are many unprofitable orchards well fertilized and cultivated, producing thrifty luxuriant wood growth and no fruit as a result of insufficient pruning. Trees at a bearing age sometimes need a severe pruning to induce fruitfulness. Pruning excites a vigorous growth of new wood, and laterals full of fruit buds for the later seasons. It aids to thin the crop which doubly repays for increased size, and quality of fruit, producing stouter branches to bear the fruit.

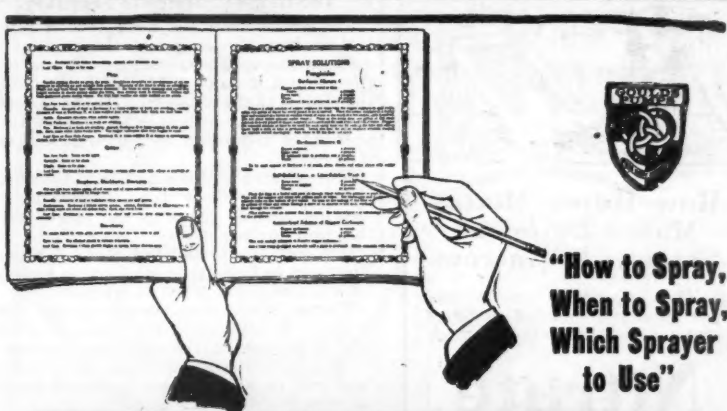
The effects of injudicious pruning on young trees is a bad eye sore to the modern horticulturist. Careful attention should be given young peach, and apple trees for three to five years, and all this can be done when no other farm work is urgent, providing weather conditions permit. While not one-half of the fruit trees planted get to a bearing age, there will never be an over production of first class fruit.—D. C. Kaufman, Pa.

### Abandoned Farms in Connecticut.

A lady living in Wisconsin writes Green's Fruit Grower asking for particulars about abandoned farms in Connecticut. She desires to know how low in price such farms can be bought, also about the condition of the buildings and the character of the soil.

C. A. Green's Reply: Perhaps too much has been said in the horticultural publications about abandoned farms in the eastern states. There are a few abandoned farms in almost all of the eastern states, but I would not buy such a farm nor would I advise a friend to buy one, for there must be some good reason why such farms are abandoned. Surely they would not be abandoned if they were productive of the ordinary farm crops, much less would they be abandoned if they were productive of superior fruits. Generally speaking, you will find on run down farms, run down houses and out-buildings. The roof leaks, paint has disappeared, the porches have begun to rot, everything has a dilapidated run down appearance. Rather than buy such a farm as this I would look for an improved farm in a good locality where neighboring farmers were making money, where there were big straw stacks and large, newly painted barns and comfortable houses, where everything had the appearance of prosperity.

You could not expect many neighbors surrounding an abandoned farm. If there were neighbors there they would be apt to be uninviting. You would not expect to find a school house or a church near an abandoned farm, nor a railroad station.



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I have kept bees in my city home for the past two years. I had absolutely no experience and gave them little care. I followed the instructions in *The Pearce Method of Beekeeping*, harvesting 114 lbs. of the finest clover honey besides such an increase in bees that I made another colony. There was no swarming, no danger from stings. It took little time and no expense.  
**GEORGE W. WILSON, Publisher of The Fruit Belt**

**This Shows What Can Be Done With The Pearce Method of Beekeeping**  
You can have one or more hives in your attic. The last winter I had room for four outside and cannot escape into the room. The Pearce Method of Beekeeping is a scientific method that eliminates two-thirds of the danger and work that formerly attended beekeeping. It represents the life work of Joseph A. Pearce, the veteran bee man. One colony and a few inexpensive apparatus start a fascinating, profitable business without taking your time from your other work. The Fruit Belt is a large illustrated magazine, devoted to the upbuilding of the fruit industry. It covers fruit growing from A to Z. That you may become acquainted with The Fruit Belt and receive a copy of this valuable book, we make the following

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### The Home Grounds in February.

The younger shrubs need special protection from freezing and thawing incident to this month. If there is snow on the ground it will pay to bank it about the shrubs that are tender. If the season is open, use fallen leaves to protect the bushes, or any other sort of mulch that is at hand.

The alternate freezing and thawing is hard on the trees, too. It is a good idea to protect roots in the same way that you do the shrubs.

Pick off the brown-tail moth larvae. They are to be found rolled up in brown leaves, tied to the trees with a web.

Winter is the best time to prune the grapes. If pruning is delayed until after the sap is running, the result may be bad.

On a stocky stem two buds are enough to leave; on a poor stem, prune so as to leave only one.

In the currant bushes, cut out a portion of the old wood and thin out the weak shoots. In thinning out the currants, remember that you want to keep the bushes open enough so that the air can get in.

Trim gooseberries in much the same way that you do currants, but not so severely.

Cut out the old, dead raspberry and blackberry canes. Leave the cutting off of the tops of the living canes until later, when you can see what is dead. The advantage of cutting out the old canes now is that there is no danger of breaking off good buds from the living stalks. (Blackberry bushes should not be cut back in winter same as raspberries.—Editor.)

If you want new currant or gooseberry bushes, bend down a branch and cover a

hoe, four or five inches deep; then stick the peas in with the finger, about an inch apart.

It is time to start the hotbed. In getting ready the manure for it, turn it over at least four times, in order to prevent its burning. Be sure to open the sashes on the hotbeds for ventilation during the three days that the manure is allowed to settle. The temperature of the manure in the hotbed ought never to be over 100° Fahrenheit.

The soil of the hotbed ought to have been frozen, for freezing kills off a good many insects.

In the hotbed during February or March plant radishes, lettuce, spinach, carrots, and parsley, although the last named does not need much heat.

Cover the hotbeds with mats until the seeds start. If the beds are very damp, open them up half an hour or an hour; otherwise ventilation is unnecessary.

After the seeds are up, on hot days, throw a little straw on the sashes to shade them. Don't let the air in the hotbeds get over 70, and keep the temperature as even as possible by ventilating.—F. H. Sweet, Va.

### In Arcadia.

Arcadia is the dream of humanity. While there is no such dream world, man continually takes delight in painting through his imagination the happy land of Arcadia. No one imagines Arcadia to be located in a city. It would be difficult to imagine New York, Boston, Chicago or Philadelphia, the land of Arcadia. Those who dream of this enticing place are thinking of a colony of people united in aim and spirit, who have located on con-



People are fond of having attractive paths in their gardens; wonderfully cultivated, beautified invitations to you to enter an enchanted place. But what a poor gravel or boardwalk bordered path can rival the charm and beauty and sincerity of Nature's invitation!

joint under the earth as soon as the ground opens.

All kinds of hardy roses ought to be trimmed before the end of winter, and early blooming roses ought to be cut back now as well as in summer. Bank up now with earth around rose bushes.

Young climbing roses ought to be cut back to a strong eye, and the side shoots named as grape vines are pruned, that is, two eyes from the stem.

All the shrubs need to be cut back or trimmed out before the sap begins to run. The old, dead stems of the spiraea and deutzias must be cut out; and the hydrangeas, altheas, ribas, weigelas, and syringas should be cut back. If any of the last named are overgrown bushes, cut them down almost to a stock, in order to give them a new start.

If the honeysuckle has not been thinned out before, do it now.

In all trimmings, be sure that the stems are cut closely.

Tie the climbers to their supports before the spring growth begins.

If there are signs of an early spring, it will pay to sow spinach, in Virginia, by the end of the month. Sow it in a protected, sunny place when the top of the ground is free from frost. Rake the seeds in, and they will start just as soon as the frost is out of the ground.

Where there is a sunny exposure and the frost is out, sweet peas can be planted even before the end of February. For sweet peas planted now, dig a trench eight inches deep, fill in an inch of manure, covering with one or two inches of soil. If a freeze comes after the sweet peas are up, draw a little dirt over them as you would with celery. By starting them now sweet peas may be made to blossom by the middle or end of May.

Garden peas (round-seeded kinds only) can be started in February. Plant them deep, making a trench with the garden

genial and productive soil, near living springs and lakes, amidst attractive forests surrounded by orchards of various fruits, vineyards and berry fields, where there is no pauperism, where all have profitable work, are warmly clad, well fed, happy and (as the world goes) sinless.

In Arcadia there is no desecration of the Sabbath. The honest villager, his wife and children, wend their way to church and listen to the counsels of the loved pastor. Their children are not confined in heated and dusty factories, but are gathered together in cool and well ventilated schoolrooms, where they are taught by competent teachers. The burglar, the assassin, the bomb thrower, or other disturber of the peace is not present in Arcadia. Distorted fashions have no foothold there. There are no tight corsets, slit skirts, frizzed hair or painted faces in Arcadia. In Arcadia, no man envies his neighbor. In Arcadia you can cross the street in safety for there are no automobiles. There are no industrial disturbances in Arcadia. Each resident is paid according to his worth. There is an absence of greed in Arcadia.—C. A. Green.

### Where the Turkey Was Discovered.

When the Spaniards discovered the City of Mexico, the commonest meat was the turkey. When it was first introduced into European farmyards in 1550, the people named it on the theory that it was an Asiatic fowl. The Germans for a while called it Calicut cock; the French still call it dinde or India fowl, and the English call it Turkey fowl, but the Oriental country from which it came, according to the theory of John Fiske, was really Mexico.

Hobo—"I've eaten nothing but snowballs for three days."

Lady—"You poor man! What would you have done had it been summer time?"

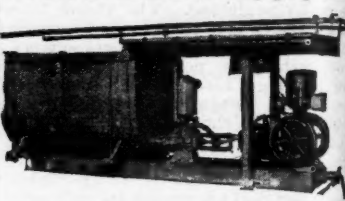
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Outfit as shown has 100 gallon Cypress tank, automatic agitator, two 25 foot leads of 1/2 inch, two brand spray hose, two 10 foot Bamboo extension rods, lining of which is composed of 1/2 inch iron pipe size, seamless brass tubing. Top is strong so operator can work from same. Curtains of the best grade of oiled canvas duck. Outfit has automatic filling device. Perfect in every detail. We furnish with this engine complete pumping jack which can be attached to any wind mill pump in a few minutes. Write for catalog and spraying calendar.

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### Notes From Field and Farm.

The best way to preserve cider is to heat it to a temperature of from 170 to 180 degrees. Keep that temperature for about ten minutes, when the cider should be bottled in air tight bottles and stored away in a cool place. The heat kills the bacteria which cause cider to become hard. Sweet cider kept on sale at the stores has usually been preserved by use of benzoate of soda, which does not change the taste but is prohibited now by the pure food laws. Apples of which cider is to be made should be either good ones or culls with the rotten spots cut out. After the cider is made it is better to strain it before putting it away or using it.

**A Distressing Cough.**—A medical journal is authority for the statement that a tablespoonful of glycerine in hot milk or cream will at once relieve the most violent attack of coughing. This is a simple, easily obtained and harmless remedy, and if it keeps good its promise will prove to be of great value. Equally simple and quite effective is the use of a glycerine and water spray through an atomizer; this is applied directly to the inflamed or irritated surfaces. In attacks of influenza, colds in the head, sore throat and like troubles, glycerine mixed with three times its bulk of boiled and cooled water is a valuable remedy.

**Some Simple Remedies:**—Sudden attacks of indigestion that by gas formation cause pressure on the heart may usually be relieved by a simple mixture of peppermint water and aromatic ammonia, half and half. The usual dose is one-half teaspoonful in a little hot water. This

about the third year; also, gooseberries, currants and grapes and a few years later cherries, plums, pears and apples. By planting the proper varieties berries can be secured from the first of June until September and grapes from the first of September till the first of November and with a cool place to keep them possibly through December and January. I have heard it said that every family of four persons should eat 1000 pounds of grapes in a year and save the cost of them in doctor bills and beefsteak.

Cherries should come into bearing about the fifth year and they will be on the tree from June till September. Pears and apples should also bear in five or six years if the trees are headed low and properly pruned, and by proper selection one may have them all the year around. For the first few years strawberries, gooseberries and currants may be grown among the larger trees, the gooseberries may be left the longest as they do well in the shade. Let me advise a ten-acre man not to confine himself to one or two specialties. There are ten or twelve different fruits that make up a fruit-grower's roll and he should plant moderately of each.

The result will be that he will have a small income from each one and all these small things put together will give a respectable sum for the year—strawberries, loganberries, blackberries, gooseberries, currants, grapes, cherries, plums, pears and apples. A person must reckon on a failure of some of the sale fruits each year. It will almost always come about, however, that the others will give something extra so that there will be an average annual return. Another source of in-



Peach orchard near Albion, western New York. Notice that successful planters of peach orchards select a hill or hill top for their orchards instead of valleys. This is a thrifty young orchard. Notice the successful apple orchard at the rear of the peach orchard.

form of indigestion often causes acute suffering to old people, its symptoms suggesting an attack of heart disease, and if unchecked it may prove extremely dangerous. We do not believe in indiscriminate dosing, but the simple remedy suggested is a very useful thing, especially in an isolated household. Remember that it is peppermint water, not extract of peppermint, that is combined with the ammonia, and the water used with it should be hot. The dose may be repeated after a reasonable time if it seems wise. The same preparation is a useful stimulant for a very delicate person subject to attacks of faintness.

### The Profits of Farming.

The profits on the farm are for the most part made out of yields that are above the average. The average crops, whether of beets, alfalfa, spuds, wheat or oats, pay for all expenses of cultivation, usually pay the taxes and some interest on the land and the value of the live stock. The profits come from crops above the average. It costs something more to grow a hundred bushel crop of spuds than a sixty bushel crop, but it does not begin to cost twice as much. The interest on or the rent of the land is the same; the cost of improvements and irrigation is the same; it costs but little more to plow well than to plow badly; there is some additional cost in the better preparation of the seed-bed, in the purchase of better seed, or the better selection of the seed grown. The increased crops are mainly the result of brain work. Sound thinking alone will not produce the extra fifteen or twenty bushels of grain, but sound thinking plus well-directed work will. It costs less to do clear thinking than it does to hire help. In other words, one man's help well directed is cheaper and more efficient than the work of two men poorly directed.

### Gets Living from Ten Acres.

You get returns from garden and orchard, not only for market but for the family, and will want to know what fruits will most promptly begin to yield. The strawberry is one of the quickest fruits to give returns, for a full crop can be taken the second year from planting. Then raspberries, both red and black,

come I want to mention and which should go into the total for a small place is two or three Jersey cows and from fifty to one hundred pure bred chickens of some good breed and two or three pigs. No family can live as they should without cream and butter and fresh eggs and the surplus always finds ready sale at good prices. The pigs can be kept and fattened on the milk and refuse fruit and will pay good interest on all trouble and expense they may make. There is always a good market for every pig.

### Grape Season of 1913 on Roll of Fame as Lean Year.

The Penn Yan, N. Y., grape season officially closed in this district yesterday when the last of the fruit was shipped to market. The crop, according to W. N. Wise, was better on the average than was expected, and the prevailing prices during the buying season were about twice as much as last year. Mr. Wise summarizes the market and crop conditions as follows: The season of 1913 will go on record as the year of the lightest yield of grapes per average acre ever known in the Lake Keuka district, and in fact the same is probably true of all grape growing districts in the country. This season, which has practically closed in the Chautauqua district, the total production totaled 4,500 carloads, against 7,500 carloads last year. But it is now believed that in the Lake Keuka district the entire crop will not amount to more than one-fourth of that of 1912, or say 35 per cent. of a normal crop, 1912 having produced one of the largest yields ever known. The prices from start to finish have averaged about double that of 1912, and the fruit growers who have had half a crop or more will secure more money net than they did from the big crop of 1912. Last year it was December 20th before the last grapes were loaded on the cars, but today will, it is expected, see the last basket on its way to market. The quality has been unusually fine, the long, hot, dry summer putting plenty of sugar in the fruit. The wine manufacturers, realizing the grapes, were especially desirable for their use, have been very heavy purchasers of Catawbas this season, which has further reduced the supply of basket grapes.



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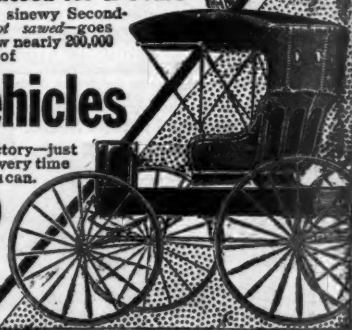
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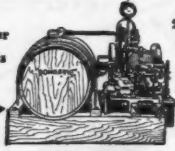
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The Special Service Department is headed by Prof. W. M. Scott, asst. in horticulture at Va. Agricultural College for two years, Entomologist of Ga. for five years and Pomologist of U. S. Dept. of Agriculture for eight years. Bulletin "The Dormant Spraying of Fruit Trees" will give you an idea of his service to buyers of Orchard Brand Spraying Materials. Send for free copy of "Dormant Spraying"—write now.

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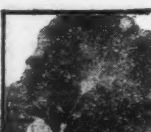
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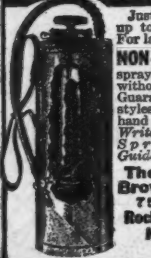
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Just the size for small trees, fields up to 5 acres, poultry houses, etc. For large sprayers—Brown's NON-CLOG ATOMIC NOZZLE sprays any solution without clogging. Guaranteed, 40 styles, sizes hand—power. Write for Free Spraying Guide. The E. C. Brown Co. 75 Jay St. Rochester, N. Y.

### The Wealthy Apple.

This beautiful apple has won for itself a good reputation as a combination dessert and cooking apple, the tree being also suitably adapted both as a filler variety and for regular orchard planting, says American Cultivator. Hardiness is one of its strong points. The photograph shows the early bearing nature of the tree, as grown in orchards of T. J. Arlington of Orleans County, N. Y.

Mr. Arlington writes: The tree is vigorous in growth and very productive. The one bad fault with the apples is that they drop badly, but the Wealthy is a very fine apple, fine flavor and a keeper. Last winter we kept them in a cellar until February 1st. Two years ago last spring I set an orchard of 1020 trees, the Baldwins were 40 feet apart and the Wealthy used for fillers. They are in fine condition. I have another block of 110 Wealthys, five years old, set 24 feet apart. I expect a crop from them soon. The orchards are plowed every spring. I put in a cultivated crop until they are five years old, after that I work the ground with a spring tooth harrow. In my oldest orchard, which is now nine years planted, I have plowed the land for the last two years, put the land in good condition and sowed oats. When the oats are six or eight inches high I turn in my sheep until the crop is fed down, then take them out for three or four weeks. The oats will grow up three or four times and furnish a lot of good feed. For fertilizer I use mostly barnyard manure, a light covering every year. One spring I used basic slag meal, a ton on about 400 trees seven years

a peculiar craft. This proved to be simply two canoes lashed together and filled with apple seeds. These were scattered throughout southern Indiana and a return made to the eastern cider presses for more seeds. It is said that Johnny was particularly impressed by the Rambo apple and exerted unusual efforts to get seed from this particular variety.

Despite the complaints of a short apple crop, ten thousand barrels of apples were shipped from Boston to Germany a short time ago on the "New England" of the Hamburg-American line. This shipment was mostly choice New England fruit, and such a large shipment of apples was never before taken to Germany in one vessel. There is evidently a steady demand for American apples abroad, even when the price is high.

### Iron for Pear Blight.

The editor of the Fruit Grower says that "while I agree as to the mixing of clay with the sandy soil for pears, I cannot so positively accept the theory that old iron is desirable or helpful."

We suggest that the editor of the Fruit Grower try the experiment with his pears. When a small boy I was informed by an older brother that nails driven into pear trees would prevent blight, and I now have pear trees more than twenty years old that have never been affected in the slightest degree—and every tree as soon as it was large enough had a circle of iron nails driven into the trunk a foot or so above the ground, and some prob-



SEVEN-YEAR-OLD WEALTHY APPLE TREE.  
Orchard of T. J. Arlington, Orleans County, N. Y.

ably were treated with several such circles of nails, one above the other.

### To Honor Johnny Appleseed.

Interest in the Indiana Apple Show has recalled the important part played by a quaint character known as "Johnny Appleseed." Johnny's picture is to be engraved on the loving cup offered to the Indiana public institution offering the best exhibit of apples at the Indianapolis show, says The Farmer's Guide.

Johnny's aim in life was to teach people what he considered the right road to health and happiness, and this consisted of eating apples with every meal. In fact, what history is available indicates that the fruit formed the major portion of all his meals, for unlike the Biblical John he had no yearning for locusts and wild honey.

The first record of his work finds him in the territory of Ohio in 1801, with a wagon load of apple seeds. These he had brought from the cider presses of Pennsylvania and West Virginia, and he went throughout the country districts, scattering handful after handful of the seeds, to form the basis of real horticulture in the middle west. It is safe to assume that a large portion of the old orchards in Ohio and Indiana were the result of Johnny Appleseed's foresight.

Having planted the seeds, he would return to Pennsylvania after more. His patience was never exhausted, and for many years his trips were noted by the pioneers in the western country. In 1803, he was seen going down the Ohio river in

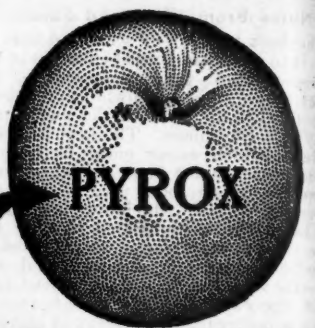
ably were treated with several such circles of nails, one above the other.

I have taken old pear trees that seemed to have outlived their usefulness and by filling the trunks with nails, cutting back the top growth quite severely and giving sufficient fertilizer and good cultivation, brought them back to bearing good fruit in abundance. From this experience it does seem as though the iron was entitled to its share of credit in the work, but I never before heard of any one else using iron for pears to substantiate the results of my experiments.

Note: The above is from the New York Sun. While I am skeptical on the subject of the benefit of iron and iron nails on fruit, none of us should be too sure of our opinions.—C. A. G.

Farm boys should learn to do practical blacksmithing. It is good work for the winter months. Every farmer should provide his boys with a shop and the necessary tools and encourage them to learn to do some of the things they will need to do later in life. Practice in forging, welding, tempering, etc., will never come amiss.

Watching cities slip into the sea is another interesting process, especially when Government geologists assure us that twenty thousand years will see New York City so far below the surface of the ocean as to necessitate huge surrounding sea walls, and eventually cause the whole of Manhattan Island to be evacuated. But as the process is rather slow it will be a long time before real lobsters swagger up the Great White Way.



## Better Fruit

SPRAY WITH PYROX

**NO WORMS.** Pyrox kills all leaf-eating insects, codling moth, canker worm and kindred pests.

**NO SPOTS.** Pyrox prevents or destroys fungous growths, scab, blight, rot, etc., thus producing beautiful,

**PRIZE QUALITY** fruit. Leading fruit growers and exhibitors like Hardy of N. H., Repp Bros., also Barclay, of N. J., Tyson of Penn., have used Pyrox for years. You know their record. Pyrox is **THE ONE BEST** spray; smooth, creamy, free from lumps, mixes easily in cold water, doesn't clog the nozzles. It sticks to foliage even through heavy rains, remaining effective for months, thus saving expense of respraying. All ready to use by adding water.

**GOOD FOR ALL FRUITS AND VEGETABLES**

SEND FOR FREE BOOK ON SPRAYING with prices, etc. Also see if your dealer has Pyrox on hand. Wise growers are ordering early.

**Bowker Insecticide Co.**

43 Chatham St., Boston.

We also ship from Baltimore and Cincinnati.

## Fraser's Trees Shipped From the Nursery to You

I have no agents, and sell direct to the planter. My Apple, Peach and Pear trees are grown in the great New York fruit belt—the right place to grow good trees, and my trees are good. Some of the 1-year trees are as big as most 2-year specimens. Get my Book About Trees—it will help you to select the right kinds for your place. Write today for a free copy.

**SAMUEL FRASER**

70 Main St.,  
Geneseo, N. Y.

## CLOVER \$5.00 Per Bu. AND TIMOTHY

**INVESTIGATE—Best and Cheapest Seeding Known.** Alsike Clover and Timothy mixed, Fully 1-3 Alsike, a big bargain. Greatest hay and pasture combination grown. Write for Free Sample and 76-page catalog and circular describing this wonderful grass mixture. Beats anything you can sow and ridiculously cheap. We handle only best tested re-cleaned seed guaranteed. Write before advance. A. A. BERRY SEED CO., Box 546, Clarinda, Iowa

## SPRAY OUTFITS

The Fuller & Johnson Spray Pump Outfits are giving the best kind of satisfaction. They maintain the high quality of product which characterizes all Fuller & Johnson goods. Strong, compact, simple and easily transported from place to place, they do the work and do it well.

In addition to spraying orchards, vineyards or vegetables, they can be used for whitewashing, disinfecting and other similar purposes. Put a

### Fuller & Johnson

at work on your farm and you'll never regret it. Let us send you a little folder which completely describes the Fuller & Johnson Spray Outfit. It gives all the details, capacities, weight and a very low price which will appeal to you.

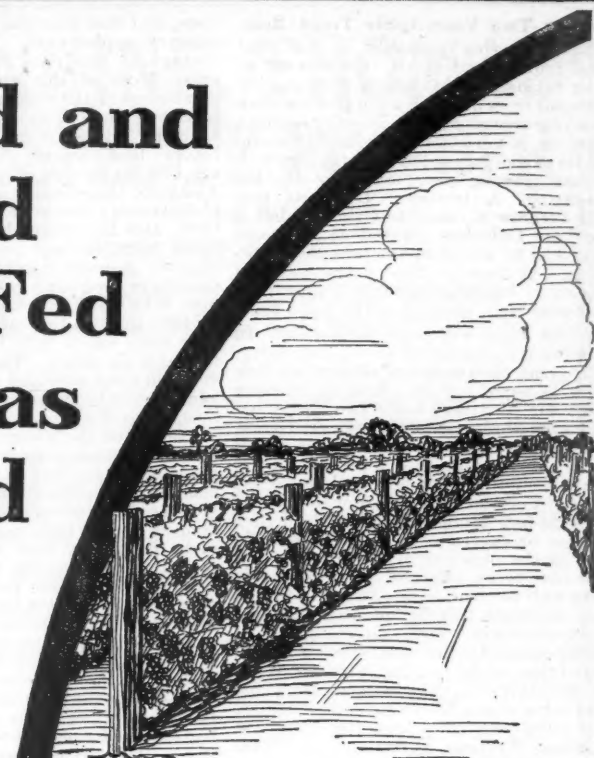
**FULLER & JOHNSON MFG. Co.**  
2 Case Street  
Madison, Wis.  
Estab. 1840  
(200)

Ask for Bulletin No. 407.





# The Orchard and Vineyard Must Be Fed as Well as Sprayed



**M**ONEY in fruit raising comes from the production of steady crops of first grades. Do not expect either orchard or vineyard to produce its best if you depend entirely on the natural sources of plant food in the soil. Especially must you keep up the supply of

## POTASH

for on it depend in greatest measure the quantity, size, color, flavor and shipping quality that give fruit its market value. In fruit-raising, as in all farming, it is easily demonstrated that **Potash Pays.**

Peaches and small fruits that have received the right amounts of potash and phosphoric acid ship better, taste better and are better. At the time of the first cultivation broadcast 300 lbs. acid phosphate and 100 lbs. muriate of potash per acre in the apple and pear orchard (150 lbs. muriate in the peach orchard).

On citrus fruits or pineapples use sulfate of potash or 200 lbs. double manure salt.

Some of the finest flavored strawberries and peaches are poor shippers, especially when barnyard manure is used as a fertilizer. Correct mineral fertilization will often make them firm enough to ship.

The nitrogen needs of the fruit can be learned by observing the amount of wood or vine growth. Manure alone is not the best or cheapest fruit fertilizer. We sell potash in any quantity from one 200-lb. bag up.

*Write for Prices and Free Pamphlets on Fertilizing Fruit*

**GERMAN KALI WORKS, Inc., 42 Broadway, New York**

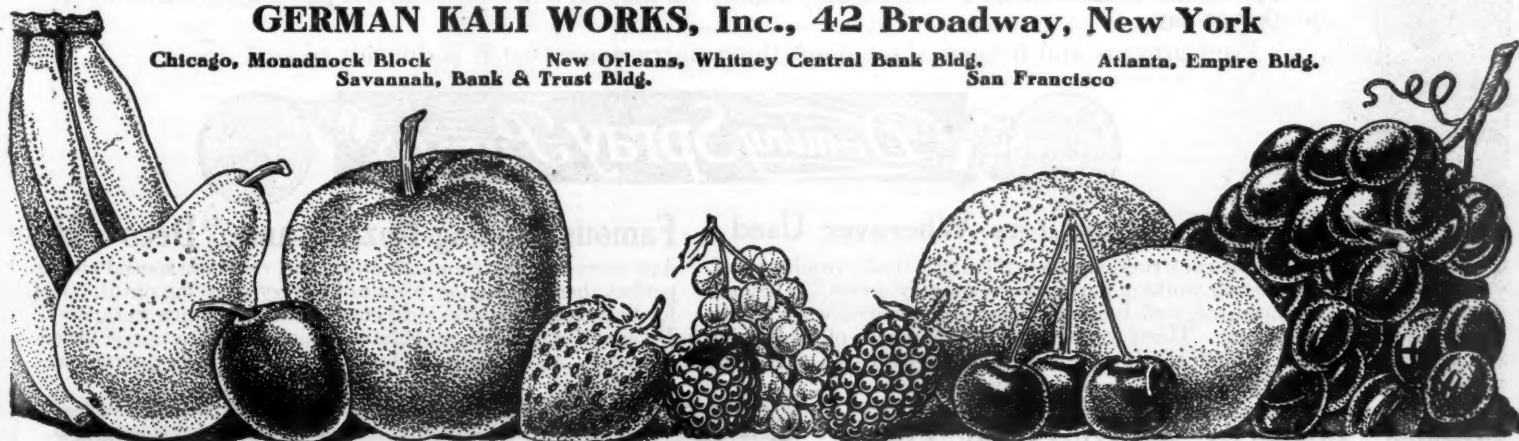
Chicago, Monadnock Block

New Orleans, Whitney Central Bank Bldg.

Atlanta, Empire Bldg.

Savannah, Bank & Trust Bldg.

San Francisco



### Soil Management.

"To be careless in the treatment of the soil is as fatal to profitable agriculture as to be indifferent in the care of live stock upon the farm," declares A. R. Whitson, chief of the Wisconsin soils laboratory, established by the last legislature to aid Wisconsin farmers. What he says further applies equally well to farmers of other states, says Farmer's Review.

"We seem content to stop with the knowledge that there is something decidedly wrong with our fields. We know that at one time they yielded much better

crops, but we willingly rest with the conclusion that they are 'wearing out.' Large areas of soils even in this state are acid and, as a consequence, will not yield as plentifully as they should. We have to determine by means of a very simple test whether or not our fields are acid and if so, apply a known and dependable remedy.

"When a farmer finds that he cannot get a good stand of thrifty clover on his land, when he sees that certain weeds, such as corn spurry and sheep sorrel, grow readily in his fields, he could, by obtaining a small quantity of blue litmus paper at

his drug store, easily test his own soil to find if it is acid. Soil acidity is responsible, in many instances, for the failure of seeding of alfalfa and clover. Growing in soils well supplied with lime, these plants are able to obtain the nitrogen essential for their growth through the work of certain kinds of bacteria or germs which penetrate the smaller roots, forming lumps or swellings, called nodules. Each of these nodules is a tiny chemical laboratory, in which nitrogen gas is built up into compounds for use by the plant."

Eat an apple every day.

### Had Changed the Water.

He had asked an unsuspecting friend to take a cross-country walk, and had picked a route that ran through the long-unvisited scenes of his childhood. His fond recollection presented every last one of them to view—the orchard, the meadow, the deep tangled wildwood and every loved spot which his infancy knew. Finally he pointed to a very small mud pond.

"Would you believe it, when I was a boy I used to bathe in that mudhole?" "Yes," answered his friend, wearily, "and it doesn't look as though they had changed the water since."



**One or Two Year Apple Trees Best.**

Early bearing probably is the most vital requirement of all. On account of their taking hold in earnest more quickly one-year trees do much more growing than two-year trees during the first few seasons. Here again varieties differ, and it would not do to compare a slow-growing sort with a fast growing one, says The Garden Magazine. A two-year Delicious tree will outgrow a one-year Grimes—but a one-year Delicious planted at the same time will be ahead of the two-year Delicious. At four or five years one-year trees can be made a third bigger than two-year trees planted at the same time.

Which class will bear the sooner? In this matter experience seems conclusive. The great fruit-growing section of New York is noted for its advocacy of older trees for planting—trees two years old and even three years old. C. A. Green, of Rochester, has put himself on record many times saying that apple trees never are expected to begin bearing before they are eight or nine years old, nor to produce fruit to any commercial extent till they are ten or twelve years old. This is the gist of the opinions of those who plant two-year trees. Part of this excessively long wait for fruit is due to the nature of the varieties usually planted in New York—Baldwin, Spy, Greening, Hubbardston, and other old standard sorts noted for tardy bearing. In the West, in Pennsylvania, New Jersey, Maryland and other states where one-year trees are the rule, the chief varieties—Stayman Winesap, Winesap, York Imperial, Yellow Transparent—are by nature earlier bearers. But in New York, with two-year trees, the waiting period is shortened only a year or two even when early bearing sorts, such as McIntosh Red, Stayman, and Delicious, are planted.

But it is different with one-year trees, in New York or Pennsylvania or Maryland or any other section. The orchardists of the West make Yellow Newtown and Spitzenburg, among the tardiest bearers of all, begin to produce fruit when the trees are four years old. At seven and eight years these orchards are producing big commercial crops. None but one-year trees are planted in the West. It is the same in the East with other varieties. W. J. Lewis & Brother, of Pittston, Pa., have twenty acres of Stayman planted on the hills of Luzerne County. These trees were five years old in the spring of 1913. In 1910 Mr. Lewis showed me these

trees, and that year they had set as high as sixty apples each. They had on an average of thirty or forty apples that year. Most of this crop was removed on account of the tender age of the trees. Last year these little trees set three times as many apples as they did the year before—that is, every four-year old tree was bearing upward of a hundred apples. Alongside these one-year trees, Mr. Lewis planted sixty two-year trees at the same time, and last year the whole sixty of these trees did not produce a hundred apples! Another example of how one-year trees bear very early is the orchard of W. Scot Whiteford & Sons, Whiteford, Md. In 1911 they had about a thousand one-year trees which then had been planted five and six years. That year the five-year old trees averaged two bushels each, and the six-year old trees averaged five bushels each. Nearly all are Stayman.

Aside from the advantage of low heads, which one-year trees have and two-year trees such as you buy on the market to-day can not have, the former has other important points of superiority. The development of fruit buds can be forced by the same treatment that shapes the heads properly, and bearing wood can be distributed throughout the head. On two-year trees the fruit is borne mostly on the "surface" of the trees. Varieties differ in this respect, as, for instance, Stayman has a habit of setting fruit all along the limbs, and Rambo sets nearly all its fruit out towards the ends of the limbs, nearly like a peach tree. The formation of fruit buds can be forced or trained and directed to a marked extent, however, and the more even distribution of fruit which it is possible to get on one-year trees enables them to carry bigger crops of fruit without breaking.

But let the good old crop adorn  
The hills our fathers trod.  
Still let us for his golden corn  
Send up our thanks to God.—Whittier

**Emerson as a Pie Eater.**

Emerson's period of literary production might have been considerably longer had he followed the light breakfast regime advocated by the "Lancet." In one of H. J. Warner's letters to his wife he writes: "We are all human and we all need cheering cups—but no pie at breakfast! It was pie at breakfast that broke down Emerson prematurely; no human being, however well, can live long and

keep his mind unclouded on pie at breakfast. Emerson lost his mind—or memory—at a much earlier period than he would have been likely to lose it owing to the vicious habit of pie at breakfast."—London Chronicle.

**How to Make Manure of Muck.**

Send to the Vermont Experiment Station at Burlington for their bulletin on peat or muck, says Rural New Yorker. Some muck has three or four times as much nitrogen as ordinary manure, while other only half as much. You cannot judge from its appearance. You will find the muck valuable chiefly for its nitrogen—there is very little potash or phosphoric acid in it. The nitrogen as it stands is not ready to feed plants, and must be fermented or "cooked." Slaked or ground quicklime will start this muck into action. Haul the muck to a well-drained place, and put in a narrow low pile. As the muck is thrown off the wagon mix lime with it by dusting it on, so as to have it worked through. A quantity of manure thrown in from time to time will quicken the chemical action, which will go on until the muck is well broken down and "sweetened." After six months of such "cooking" the muck will provide a good substitute for the nitrogen in manure. By adding bone and potash you will have a good mixture for most farm crops. Fresh sawdust contains an acid which is likely to sour the land. Well-rotted sawdust will answer as fertilizer, though there is but little plant food in it. You can mix the sawdust in with muck or manure and lime and ferment it or mix it with quicklime alone, but it is not worth enough to pay for expensive handling.

**Care of Automobile Tires.**

An automobile is pretty nearly human in one respect. It requires care to make life long, and care that it may perform its functions up to the standard of its creation. That is often entirely overlooked by the owner of the car and this negligence is certain to hasten the tire breakdown.

Any tire is subject to more or less abuse, owing to the fact that it must encounter all kinds of roads and receive little or no consideration from the driver. Cuts, stone bruises, mud blisters, etc., result, and if these are neglected they eventually spell out the destruction of the tire, as dissipation does the man.

**More and Better Fruit.**

Already the electric current generated at Niagara Falls lights the farm home; motors lift the water and perform endless duties about the farm; electric washers and vacuum cleaners lighten the housewife's burdens, and with the day's work completed a few miles' trip in the family auto tops the tasks of the day with new delights, imparting invigorating impulse for the duties of the morrow. In the spring, when the apple trees are in bloom, one can enjoy a trolley ride of 40 miles from Sodus Point to the urban approaches of Rochester, following a route dividing a galaxy of white blossoms, whose fragrance permeates the car. This trip in the bloom period is called the "apple blossom route," and is annually featured by the railway company, enticing an ever increasing pilgrimage and enkindling most pleasant thoughts of the ride. To get out of the "apple atmosphere," one must take to the cities or large towns that dot the fruit belt, for within that favored district all energy seems to bend directly or indirectly to the fruit and produce business. Factories for the manufacture of barrels, boxes and crates are numerous, yet they fail to supply all the packages used in marketing the fruit, and many carloads are shipped in from distant points. Either in direct, or related, contact the majority of the residents of the fruit belt have to do with the production of fruit. At the bottom of the interlocking gradations of prosperity in the Ontario south shore land is found the great factor of fruit, and pre-eminently the apple. Lean years there have been, but not in recent memory. No fruited land owner is laying up complaint against Dame Nature's dealings with his kind. Instead he is more likely to be looking up the latest bulletins from the experimental stations and framing plans for intensified activity in cropping more fruit, for "more fruit and better fruit." is the general cry of the orchard men.

It is estimated that there are at least 2,000,000 gasoline or oil engines at work on the farms of the United States.

November, 1913.

Mr. Chas. A. Green, Rochester, N. Y.

Dear Sir:—My husband has taken your paper for more than 21 years. I think it one of the very best and cleanest family papers.—C. S. Gaus, New York.

# The Deming "Victory" Comes Complete Ready For Work

Just put it on a wagon truck and haul it to your orchard. Fill tank, start engine and get busy. The Deming "Victory" will meet the demands of the most exacting horticulturists, since it excels in many points.

The engine is 3 H. P. and can be easily detached from spraying rig. The Pump has two cylinders and will maintain a pressure of 200 lbs. to the square inch. A very large air chamber insures an even discharge. The liquid is drawn into the pump through a suction box which takes the place of suction hose. One packing of the pump will last an entire season. As shown in the picture, the valves are easy to reach. With pump, engine, 200 gallon tank, rigid steel frame, "Deco Hose," bamboo extension pipes, and famous Deming Nozzles, the "Victory" is the best and most complete power spraying outfit on the market to-day.

Fruit growers and farmers throughout the country agree that it is difficult to beat

**Lead All Competitors Wherever Used**

Their simple construction makes them practically troubleproof. All important working parts are within easy access. They are easily operated, well built and do most efficient work in the shortest time. Thirty years' experience are back of all Deming Spray Pumps which practical men deservedly call "The World's Best."

**Instructive Spraying Guide FREE**

Let us help you to do your spraying right. Our guide tells when and how to spray in garden, orchard and field, also with what you should spray to fight the different pests. Catalog describes over twenty styles of spray pumps in detail. Testimonials from satisfied owners will help you pick out the sprayer for your needs. Write for Your Free Copy of this useful guide To-Day.

**The Deming Company**

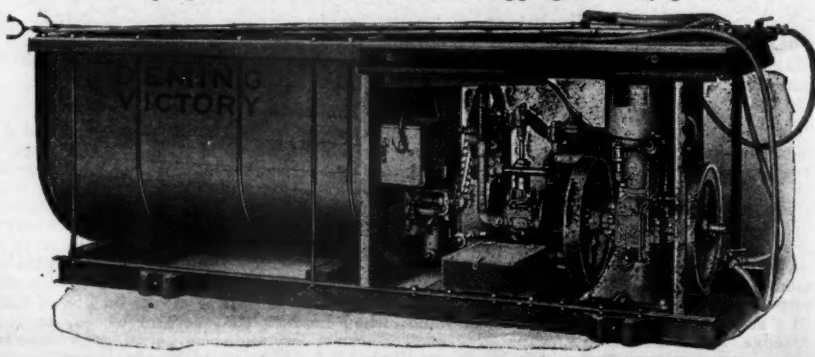
123 Depot Street

Salem, Ohio

Hand and Power Pumps for all Uses

**Famous Deming Nozzles and "Deco" Hose**

Are necessary for thorough work and we make special efforts to perfect them. Deming Nozzles fit every spraying outfit, though for best results use the ideal combination: Deming Sprayers with Deming Nozzles. We manufacture nine styles—a nozzle for every purpose. All are tested before shipping and fully guaranteed.





## LIFE OF NATION DEPENDENT UPON GREATER CROPS.

Declaration by Howard H. Gross in Address.

"Our growth in population is not equalled by our production," Mr. Gross said early in his address. "In the history of every nation which has perished we find that its fall began when it ceased to produce food enough from its own soil. The fall of the Roman empire dates from the time it failed to make its farm products keep pace with the population."

Before offering the plan he has devised as a remedy for the failing of land products, the speaker told his audience that Americans must learn to economize. They must not "throw the tough end of the steak into the garbage can, but make a stew of it, which will be better than the steak was."

## MUST HAVE BIGGER CROPS.

"We've reached the point where something must be done," Mr. Gross said. "We must produce greater crops. We must lessen the profits of the middleman. We think the steel business in our country is large. It is, but farming is ninety times bigger. Farming is the greatest business in the world. We need to teach the farmer to apply the methods of industry and business principles to his occupation. This done, the farm products of this country would be increased 40 per cent. If the poor farmers would increase their efficiency to the point now reached by the best farmers and the best farmers would increase their efficiency, in twenty years this country would have a corner on the world's money. Better bring wealth out of the land than build battleships and increase standing armies."

In its first efforts to help the farmer the government issued bulletins in language to which the farmer is not accustomed, Mr. Gross said. If the average farmer were to follow one of these bulletins accurately he would fail. The thing to be done is to teach the farmer the most improved methods of getting the greatest results from his land, both in grain and in live stock that feeds from the land, the speaker explained. He told of going to Europe for ideas and said that the Danes are the best farmers in the world.

## MUST SPREAD KNOWLEDGE.

"The thing to do is to get this information to the man for whom it is intended," Mr. Gross continued. "We saw that what was needed was to get the personal contact between the man who has this knowledge and the man who wants it. I went to work on plans not my own, but a little gained here and a little there. I saw that we must get money with which to train, send out and maintain men to teach the farmers. I explained my plan to President Taft, then in office. I got an interview of forty minutes with him, when I expected only ten. He told me he would give his warm support. I then saw Champ Clark, and he said: 'I will do anything you ask to help in this cause.' 'Of all the help I have had, that received from the women's clubs has been the greatest. When they ask for the enactment of a law they know what they want. Mr. Taft told me, 'If you want anything done, get the women to take it up. They never know when they're beaten.'"

"When our plan of putting men trained by the government in our colleges and at our experiment stations is fully in operation, we'll have a man in every county."

## BOYS AND GIRLS ON FARM.

"Any plan to help farmers would be a failure if it did not benefit the boys and girls," said Howard H. Gross. "We must make farm life so attractive that the young people will be content to stay at home. Don't wait until the boy gets to be a grown man before you take him into partnership with you. He'll do better than a farm hand, for he'll be working with what is his. Give that girl a plot of ground and let her have a bank account. She'll make a better wife and mother."

"The farmer who has been raising hogs and cattle has been doing so with little thought of the cost of production. All his thought has been about the price he was going to get. The manufacturer is constantly figuring to cut down the cost of production. By our improved methods, which we try to teach, one farmer fed 170 steers on land on which his father had fed forty. Does that mean anything to you? We must teach the farmer how to increase his income by decreasing the cost of production. The man to whom I referred has so much stock that he is now able to keep his help the year around. Another thing we must do is to have shorter hours for the man on the farm. We must have some middlemen, but there is no need for three or four."

## Nuts as Food.

When we read that 7,000,000 bushels of peanuts are consumed annually by the people in the cities of America; that our import of nuts, which forms three-fourths of the market supply is so large that every

steamship crossing the Atlantic now, particularly from the Mediterranean, brings tons of them, furnishing a business that requires many millions of dollars to carry it on; that our own nut growers, while increasing their acreage of nut bearing trees can't begin to supply the demand, it is time for the American housewife to fall in line with the nut cult, which is surely gaining ground, both from hygienic and economic reasons.

According to nut growers, the pecan is the coming nut with a greater future before it than any other nut raised in this country. It is not many years since these delicious nuts were first introduced to the people of the North; but wherever they have gone, they have met with instant and cordial favor. It is a fine keeper, can be grown in practically unlimited quantities, both shell and meat are good to look upon, and it can be successfully grown over a wide area of country.

Being twice as nutritious as any kind of flesh food, take nuts pound for pound, it is not to be wondered at that nut meats of all sorts are gaining in favor as an article of diet.

In nutritive value, the black walnut heads the list of our native nuts, though the pecan is said to be the easiest of digestion. In any locality, whatever variety of nut is there most plentiful may be made to serve as a substantial part of a vegetarian dietary.

Old nuts are apt to become brittle as they dry. If they are put into a kettle of water and boiled for a few minutes they may be more easily removed from the shell whole, if cracked as soon as cool. —Washington Star.

## Farming With Dynamite.

Webber Brothers, of Me., have done a large stroke of farming with dynamite on their farm in Litchfield, says Am. Cultivator, having used nearly 1000 pounds of that explosive.

They set out 1600 apple trees, using one-third of a stick, or one-sixth of a pound for making the hole for each tree.

Probably one-half of the labor was saved by this method, as two men set out over 100 good sized trees in a day. Another advantage gained by the use of dynamite is the killing of grubs and worms in the immediate vicinity of the body of the tree.

Webber Brothers also used considerable dynamite in blasting out rocks and stumps and in breaking up sub-soil and digging ditches for drainage.

## Simple.

Two citizens were discussing who should be head of the house, the man or the woman.

"I am the head of my establishment," said John. "I am the breadwinner, why shouldn't I be?"

"Well," replied the other, "before my wife and I were married, we made an agreement that I should make the rulings in all major things, my wife in all the minor."

"How has it worked?"

"So far no major matters have come up." —Newark Star.

## GENUINE THOMAS PHOSPHATE POWDER

(BASIC SLAG MEAL)

## KEY-TREE BRAND

GROWS BIG RED APPLES, SOUND, HIGH COLORED PEACHES, AND GRAPES THAT DO NOT SHELL OFF

It isn't necessary for you to take our unsupported word concerning the superiority of Genuine Thomas Phosphate Powder, Key-Tree Brand for Fruits. The following results speak more eloquently than we can hope to do:

At the Great NEW ENGLAND FRUIT SHOW held in Boston, November 12-16, 1913, Apples raised with Genuine Thomas Phosphate Powder (Basic Slag Meal), Key-Tree Brand, won

51 First Prizes and 25 Second Prizes;  
Including Three Governors' Trophies

First Prize, \$150.00 in cash for Best Fifty Boxes over entire Show, The International Cup for Best Five Barrels, First Prize for Best Ten Boxes, First Prize for Best Five Boxes, Sweepstakes for Best Single Box, etc.

Mr. A. T. Repp, for many years President of the New Jersey Horticultural Society, writes: "I have used the Genuine Thomas Phosphate Powder (Basic Slag Meal) for years with excellent results on our apple orchards. With its use the fruit increased in size, color, and healthy growth."

Barnes Bros., the famous nurserymen and fruit growers of Connecticut say: "In regard to Thomas Phosphate Powder, . . . on our peach orchards where we used it, the trees have made a splendid growth with heavy, dark green foliage, the fruit was of excellent color, and keeping qualities remarkable. We never saw better colored Baldwin apples than those we grew where we applied a good dressing of Thomas Phosphate Powder. The best sold at retail for \$9.00 per barrel."

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The remarkably good results from the use of Genuine Thomas Phosphate Powder (Basic Slag Meal) in fertilizing fruits and leguminous crops, no doubt account for the offering of other so-called Basic Slags said to be "just as good." Prospective buyers are warned that these materials are not the same as Genuine Thomas Phosphate Powder, Key-Tree Brand. For your own protection insist on having our Key-Tree trademark on every bag that you buy.



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This is a practical every day time-, labor-, and money-saver for the woman in tending her vegetable garden as well as for the market-gardener. It combines in a single implement a capital seeder, an admirable single wheel hoe, furrower, wheel cultivator, and a rapid and efficient wheel garden plow. Sows all garden seeds in drills or in hills.

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An invaluable tool in the market-garden, truck and strawberry patches. Its 12 chisel-shaped teeth cut out all weeds, stir and mellow the soil and leave the ground in the finest condition without throwing dirt on plants. Can be set exactly to desired depth making delicate work easy.





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## The California Raisin Industry.

One of the largest and most important branches of fruit growing is the cultivation of the raisin grape, the acreage in which is now by far the largest in the world, says California Farmer. The first introduction of the raisin vine into California was in 1851, by Colonel Agostin Haraszthy, of San Diego, from some muscatel vines from seeds of Malaga raisins. In March the following year, he imported the muscatel of Alexandria from Malaga, Spain, and ten years later, during a visit to that place in September, 1861, he selected cuttings of the Gordo Blanca, which were afterwards grown and propagated in his vineyards in San Diego county. He was thus the first to introduce the raisin vine in California. Another importation of the muscatel of Alexandria was made in 1855 by A. Delmas, and planted near San Jose. G. G. Briggs, of Davisville, also imported muscatel grapevines from Spain.

## The New Bracket Peach of Nectarean Flavor.

The new peach, Bracket, is named after Col. G. B. Bracket, Chief of the United States Bureau of Plant Industry. This remarkably large, beautiful and delicious peach came to us from J. J. Berkman's of Georgia. Mr. Berkman's name as introducer of itself is enough to recommend any new fruit. I have written Col. Bracket, asking for a description of this new peach. The information he sends me as abbreviated is as follows:

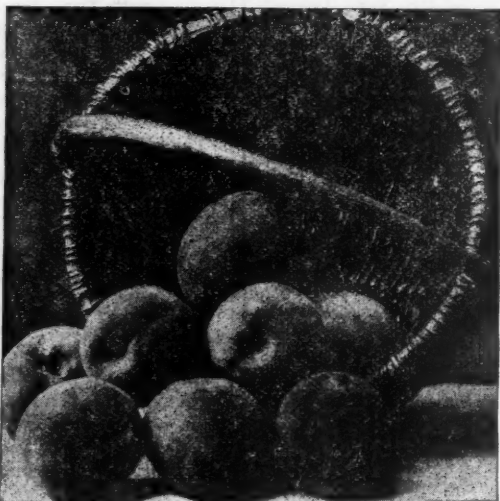
"Form, roundish. Size, above medium, 3 inches in length, 2½ inches cross section. Color, yellow with blush, marbled and brokenly striped with crimson. Skin, medium thick, tender. The color of flesh

price of \$4.25 to \$4.50 is easily proven even by an amateur.

No matter what the first or even the final cost of the fruit may be, salesmen say it is now largely a matter of educating the buyer up to paying the price. So far any attempt to talk \$4.50 to \$5 on anything under extra fancy grade has resulted in the most limited sale. It is only when fruit gets down to a price which the public considers fair that jobbers or retailers can do any large volume of business, so that it looks like that the apple men will have their hands full from now on waging a campaign of education directly among the consumers if they expect to get rid of their fruit. The Advertising Committee may yet find their hands full to work out the 1913 problem. The season is not over yet by a long sight.

Where there were 6,000,000 bbls. in storage on Dec. 1, 1911, and 8,000,000 on Dec. 1, 1912, experienced apple men not in the deal this season but who have followed conditions closely, say that the Dec. 10, 1913, report will probably show holdings equal to at least 60 per cent. of the 1912 storage. This would make about 4,800,000 bbls. There are some operators who believe there are 5,000,000 bbls. put away. The most extreme low view is 4,500,000. The lightest year in the past five years was 1910, when around 4,000,000 bbls. were put away, while the five-year average shows 4,200,000.

Western New York apple men are equally as certain that there is still a greater shortage in barreled fruit. York State shippers claim that they have moved more cars of apples for the same period than for any previous year, but that the fruit has gone directly to buyers in the South, Southeast and Middle West.



is yellow, stained red at stone. The texture is tender, melting, juicy. It is a freestone. Flavor, subacid. Quality, good to very good. It is apparently a meritorious variety that ought to make a good showing on the market. Its form, size and color are attractive."

The above description is somewhat technical and different from that used in ordinary catalogue descriptions. The peach is about the shape and size of Elberta. This makes it a very large peach. The pit is rather small, making the Berkman's peach a fat peach with but little waste. I was attracted to this peach first by the high respect I have for Mr. Berkman's, its originator. I was among the first to learn the value of the Elberta peach and to introduce it widely to the public. I am greatly interested in this new yellow, red-cheeked peach of large size and fine quality. I believe it will be appreciated not only by those who love a fine peach growing upon their own grounds, but those desiring a market peach.

## APPLE MEN OPTIMISTIC.

Agree That Big Shortage in Holdings Will Boost Market.

Generally speaking there has never been a more optimistic feeling in the apple trade than today, says the "Packer."

Not that there are many who expect to make big money, but all who have any appreciable amount of fruit in cold storage expect a fair profit in spite of the early predictions of experienced operators who have been certain all along that the orchard price was entirely too high. There has been unquestionably much more fruit put away in western New York that cost over \$3 than under that figure, so that those who are selling around \$4 to \$4.25 today are simply flirting with chance. Until this fruit gets above \$5 there is no safe margin. Under the most highly organized distributing system, \$3 fruit delivered to the western New York storage house costs practically \$4 on the cars, or \$4.25 on Pier 17. If it is handled once or twice through the store, another quarter in cost is added, so that the cost

Hence it has not made an appearance in the larger markets, so that there will be general surprise when the December report gets out. These shippers expect the first report to give the apple market a big boost. They agree the reaction will hurt all hands, hence the largest operators are advising steady selling even where the profit is small.

Often a man has a lot of good traits that you would never suspect if he didn't tell you about them.

## The Peach Situation.

I have traced a basket of peaches from Grimsby to Queen St., West, Toronto, and made the following discoveries, says Grimsby Independent.

First—The fruit grower got forty cents for his basket of fruit, the railway company got five cents, the commission house got four cents, landing the basket of fruit in the hands of the retailer in Toronto, for forty-nine or fifty cents. The consumer paid at a retail store on Queen St., West, Toronto, ninety cents.

Now, this is not the history of only one basket of fruit, but it is the history of thousands and tens of thousands, and it is a very conservative history, because there are many choice baskets, for which the grower does not get anything more than the usual price in his home town, and the retailer puts them up as extra choice, and charges a dollar, a dollar and ten cents for them, and even a dollar and twenty-five cents.

What does this prove? This proves that the grower got forty cents for his basket of peaches, the railway company got five cents, the commission house got four cents and the retail dealer got forty cents.

What does that mean? It means that the retail dealers of the Dominion of Canada are getting the profits of the fruit business, instead of the growers.

The railway is paid a fixed amount, the commission house gets a fixed amount, but the retailer fixes his own price and fixes it too high.

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### RETURNS FROM INDIANA APPLES. Selling is Greatest Problem of Indiana Horticulturists.

Yet this very problem, which was so successfully solved by the western associations, has been causing more trouble to the apple growers of Indiana than all of the worries of spraying, pruning, and cultivation combined, and it has been only in recent years that any degree of success has been attained. Uniform, standard packs have come into use and Indiana is forging to the front as an apple producing state.

Of the first Indiana Apple Show, held in 1911, Mr. H. E. Van Deman, in his address to the exhibitors, said, "There is scarcely an exhibit in this show that would be allowed to appear in one of the Western Shows;" of the Second Indiana Apple Show, the same worthy judge said, "There is scarcely an exhibit in the show this year that is not fit to appear in any of the Western Shows;" and from all indications for the coming Indiana Apple Show, the verdict of Mr. Van Deman should be "There is not one exhibit in this show that would not do credit to any of the Western Shows."

Care in picking, grading, packing, and storage have been the keys which have opened the doors to success for the Indiana Apple grower who has given the proper attention to the spraying, pruning, cultivation and other details of managing his orchard.

#### Fruits and Vegetables Necessary.

Considerable bulk is an essential factor in the diet. If the foods eaten were of such a nature as to be almost completely absorbed, the large intestine would not readily empty itself and serious complications would follow. For this reason bulky foods, like fresh succulent vegetables and fruit, are of importance, as they usually contain a considerable proportion of indigestible matter.

In general, it may be said that few investigations have been made which indicate that the different fruits possess specific medicinal qualities. Those which contain an abundance of sugar are naturally excluded in a large measure from the diet of diabetics, while there are other conditions in which acid fruits are conceded to be undesirable.

#### Fruit Stimulates the Appetite.

To the juice of acid fruits like the lime, lemon, orange, pomelo, or "grape fruit," and the kumquat (the small orange which is eaten entire, both skin and pulp) hygienic properties are commonly attributed, and there is reason to believe that this reputation is deserved. Such fruit juices stimulate the appetite and are beneficial in other ways. The bitter principle in the pomelo is commonly said to be of value medicinally, perhaps because it suggests the bitter flavor of quinine, but so far as can be learned the real value of this bitter quality is a matter of opinion rather than of experimental study.

#### The Hygiene of Fruit.

The extended use of fruit in the diet is justified on the ground of food value, and esthetic considerations, but there are those who seek a further justification on the score of hygiene. It is commonly conceded that most fruits are laxative, and it seems probable that they owe this property to the considerable amount of water which they contain, to the salts in solution, or to the irritating crude fiber, small seeds, or other indigestible materials present, or to all these together. Man seems to crave and require some acid in his diet, and the citric, malic, and other fruit acids are undoubtedly wholesome.

The importance of fresh fruits and green vegetables in supplying the body with iron and other mineral matters is often spoken of, and it is true that the amount of iron, for instance, which many such foods contain is large in proportion to their protein content or their energy value. This means that if the ordinary diet does not supply enough of some mineral constituent it may be obtained by adding the fruit or green vegetable which will give it, without materially adding to the nutrients and energy of a diet already abundant in these respects.

Fortunately there are so many good reasons for using fruits that we have little need to base our use of them in quantity on supposed medicinal virtues.

#### New Method of Fertilizing Trees.

Just now foreign horticulturists are considerably wrought up over a new method of fertilizing fruit trees, and experiments made thus far seem to show that there is much merit in the plan. Under this method holes from four to five inches deep are dug twenty inches apart throughout the orchard. In these forty grammes of fertilizer, containing twenty grammes of superphosphate, ten grammes of nitrate of soda, and ten grammes of muriate of potash, were placed in each hole. The experiments as conducted at four different places all showed an increased vigor for

both young and old trees and greater fruit production on bearing trees, according to the Indiana Farmer in a recent issue.

Among the advantages pointed out of this method of fertilizing are the rapidity and economy of application, the possibility of renovating orchards growing in sod without plowing, avoidance of mechanical injury to tree roots, and the application of fertilizer in the immediate vicinity of the feeding roots. I don't think well of this method.—C. A. Green.

#### Premiums at Agricultural Fairs.

Prof. A. B. Graham, of the Ohio Agricultural College, makes some excellent suggestions as to the awarding of prizes at the agricultural fairs. He says: "Competition in displays only increases interest in the measure as the observer is assisted to understand the points of excellence taken into consideration by competent judges." \* \* A large number of exhibitors from the county should be encouraged by giving more attention to the non-professional exhibitor, whose material is new each year, than to the professional exhibitor who holds over material from year to year, because he has learned that the Judge's eye can be caught. The professional exhibitor who purchases material from different persons with the hope of running it into a blue ribbon winner, should not be given preference over the grower or manufacturer of the product. Some of the greatest premium winners have been professionals whose winnings did not represent the actual producer. 'Exhibited by Producer,' should have some consideration in making up premiums."

#### American Peaches in England.

Harper's Weekly says that English folk are shy of buying peaches which they have learned to look upon as a luxury. That this is so is not to be wondered at in view of the high prices that the home-grown fruit commands. Hothouse peaches for example fetch at retail as high as \$3.60 to \$6 a dozen, and even the outdoor fruit costs from \$1.50 to \$2.50 per dozen. On the other hand, consignments from the State of Washington sold at retail in the London Market lately for sixty cents a dozen, while Colorado peaches could be bought at retail for as little as three cents apiece.

American apples have found a market in England, where people ask for them as a matter of course. There seems no reason, therefore, why the imported peach should not become equally popular, as the enjoyment of the fruit will thus be made possible to those who find the home-grown product beyond their means. American growers see prospects of a good market in England now that people there begin to realize the comparative cheapness of the imported peach.

#### One Billion Bacteria a Week.

As soon as the roots of a leguminous crop begin to grow, if the soil is sweet—that is, does not lack lime—tiny bacteria, so small that it takes a powerful glass to see them, attach themselves to the roots of the pea or other leguminous crop and start to housekeeping, building a little nodule, as it is called. It takes only about twenty minutes to complete the growth of one of these entities, but they do not die. They simply divide themselves into two, each starting a new nodule or adding to the one already begun, and dividing again in twenty minutes and so on, *ad infinitum*; multiplying at such a wonderful rate that it has been estimated that if there was one in good condition here a week ago, there are a billion now. These little houses, nodules, grow into great hives until soon they are as large as walnuts on the roots of the plants. Their functions are peculiar and wonderfully interesting as well as profitable.

The air, as you know, is four-fifths nitrogen. Nitrogen is the most expensive fertilizer that you buy, and it is positively essential to plant life. Now, these little entities suck air into the earth and aerate the soil. It is just as necessary for a plant to have air as it for an animal to breathe it. They therefore do the splendid service of bringing the air into the soil and in bringing it in they digest the nitrogen that is in the air and convert it into mineral nitrates that are soluble in water and immediately available for plant food. It is estimated that under favorable conditions where an acre of land is well inoculated, the bacteria will bring twenty dollars' worth of nitrogen to the acre within the year—that is, it would cost twenty dollars and more to buy and put upon the land the nitrogen that these little entities have drawn from the atmosphere into the soil.—Col. Henry Exall, in Dry-Farming.

November, 1913.

Green's Fruit Grower is my best paper, although I receive four others on fruit growing which are helpful to me.—J. S. Underwood, Illinois.

### What Makes a Good Sprayer?

**High Pressure**—to throw a strong, fine spray. **A Pump**—of sufficient capacity under slow speed. **An Agitator**—to keep mixture well stirred. **Some Method of Cleaning** the strainer.

Ask any fruit farmer with experience. He will tell you that the most annoying thing is to find pump suction or nozzles clogged when he has a tank full of spray mixture in the orchard and must clean out before his sprayer will work.

### "Ospraymo" Line

Automatic Brushes with Mechanical Agitators are furnished with Empire King Barrel Pump and Watson-Osraymo Potato Sprayer, also with all LEADER Gasoline Engine machines.

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Why pay two prices for a good engine, or take chances on a poor, or an unknown engine, when the "WITTE" costs so little and saves you all the risk! You can pay more than my prices, but you can't get better engine value from any one. That's what my thousands of customers say and they ought to know.

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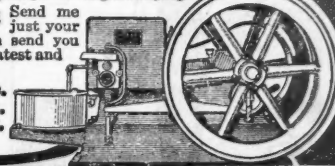
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the material that represents the greatest development in Insecticide manufacture. In addition to its superiority over pastes, it is a step in advance of present day dry Arsenates of Lead in its more finely divided condition, proven by its bulk.

Greater bulk means better suspension, hence, a more uniform and far reaching spray.

S-W Dry Arsenate of Lead has from 31 to 33 per cent Arsenic Oxide thoroughly combined with lead, assuring maximum killing power and minimizing the possibility of foliage injury.

Being in dry form, without water contents, it's all poison and therefore represents greatest economy. One pound of dry will produce the same results as two or three pounds of Paste Arsenate of Lead.



Bulk for bulk showing actual comparison of same weight of S-W Dry Arsenate of Lead and two other makes selected at random.

You cannot afford to experiment with Insecticides. That is a part of our business and how well we do it is best illustrated by our new Dry Powdered Arsenate of Lead—the material best adapted to your conditions. It has been tested successfully by leading experiment stations.

Write for folder giving test-tube evidence.

For those who still desire a paste material we will continue to manufacture our New Process Arsenate of Lead (containing Adhesive Lead Compounds) None better in this form

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Insecticide and Fungicide Makers

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Horticulture as an Occupation for Girls.

Editor Green's Fruit Grower:—There is much time and thought given to the problem of keeping boys on the farm, and the girls seem to be neglected. Perhaps it is taken for granted that they are naturally more of a home loving disposition, and will remain from force of habit.

We have a beautiful faith in our daughters, and trusting that they will contentedly remain in the home until "Prince Charming" comes, we fail to take sufficient notice of the spirit of discontent and dissatisfaction that has taken possession of them until they have taken matters in their own hands and gone to the city to try to carve out their own destinies.

Girls have the same desire to be self-supporting as the boys, and the wise parent will recognize this and make provision whereby the daughter's wishes may be realized.

Teaching, sewing, housework, poultry raising, and bee keeping are all admirable occupations for girls, but tastes differ and to that list should be added small fruit culture. It is healthful, pleasant, remunerative business, and girls are especially fitted for the work. They are enthusiastic, painstaking, careful as to details, and have a strong love for the beautiful, all of which characteristics are very essential to make a success of fruit growing. A good practical business education will be required for the purchasing of supplies, marketing fruit and plants, and the necessary bookkeeping.

The bright, energetic, enthusiastic girl will derive much and profit from the business. She can easily obtain as much land as she desires from father, for a small rental fee, and as strawberries are the best all around berry, yielding the quickest returns, it will be best to start with as large an acreage as is permitted by other conditions. She should divide her plot in such a manner that one section can be kept for commercial plant growing, as there is as much profit in that branch of the business as in the fruit, and the work can be done early in the season.

Location and soils must determine to a large extent what other fruits will yield sufficient to warrant their planting. Chickens can be carried very successfully with small fruits of all kinds, and are especially valuable, furnishing an income throughout the year. It will be necessary to keep them in yards through the fruiting season, but the rest of the summer they may run at large.—Mrs. L. H. Palmer, Wis.

A woman poured a quart of gasoline in the marble wash bowl of the toilet room and placed a silk waist in it. She closed the door and returned in about ten minutes. She rubbed the silk between her hands. This generated sufficient electricity to make a spark. The gasoline exploded, the house burned and the woman lost her life.

Woman's Place.

"The woman's place is the home, and very truly," said the physician. "Her first duty is to her family; but as Ruskin has so admirably pointed out, for the women who, after that duty is discharged, have leisure time, there is a vast field for their efforts among the less fortunate, improving the sordid homes of the poor and lowly, cleaning out the disease breeding back alleys and forcing the substitution of hygienic dwellings for the foul tenements that are a sore on any city that contains them, and extending the tender hand of helpfulness to unfortunate humanity as only women of intelligence and breeding—women of the homes—can.

A Woman's View.

Editor Green's Fruit Grower:—I am an admirer of your magazine especially the "Woman's Department." I have been kept closely at home all my life in order to fill my place as wife, mother and housekeeper. Am always willing to learn. My husband is a very quiet man, never talks much. I have read a great deal during my married life and derived much pleasure by so doing. I have never before written for publication until the appearance of the article printed in August Fruit Grower.

Another woman's trouble on the same subject, but from a business woman's point of view, which I know nothing about, called forth the article. I spoke from the point of view of the married woman, who has kept a home for 25 years. I did not mean that a wife should know the details of her husband's business in order for him to prosper, if she takes care of her own she is filling about as big a place as one can fill. But she should know enough to take care of what falls to her as a legacy from her parents or otherwise, be it much or little. The point I wanted to bring out was, to keep that for her own personal use. Many men would use it in their business and that would be the end of it, for all men don't succeed in business. No, I would not expect the husband to consider the question if he had money left to him, the husband prom-

ises at marriage to maintain the home and wife and family if there be one and he is legally required to do so. The wife does not promise nor does she expect to provide for the home. They each have their place to fill, one is just as important as the other; but as I believe my portion would have been lost with the rest if I had not looked out for it, I advise all other women to do the same. It may seem very one-sided to take such a view but it is the only side I can see when it's the only chance to have a home.

Another subject I would like to speak on is, why we town people who work can't afford all the fruit we would like especially apples, the queen of all fruits, when all kinds of fruits rot on the ground in western New York because it don't pay to take care of it. I know this is true. I have been watching the farm papers to see if they had anything to say on this subject.—Margaret Smith, Pennsylvania.

A Pie Secret.

When making juicy pies, moisten the edges with milk or water and rub smoothly. Then insert two or three small pieces of macaroni in the centre of the pie. The juice bubbles up into the macaroni instead of running over the crust.

Table Manners, Ancient and Modern.

To see the modern child devour food is commonly an unpleasant sight. If you sit near enough to it to come within the radius of the food it spills and drops you will surely regret it. But bad as they are, they seem in those "good old days" we prate about even worse.

Mrs. Hannah Woolley, author of "The Gentlewoman's Companion," the standard seventeenth century book on etiquette, finds it necessary thus to warn her readers: "Gentlewomen, discover not by any ravenous gesture your angry appetite, nor fix your eyes too greedily on the meat before you, as if you would devour more that way than your throat would swallow. \* \* \* In carving, avoid clapping your fingers in your mouth and licking them after you have burnt them. Close your lips when you eat, and do not smack like a pig. Fill not your mouth so full that your cheeks shall swell like a pair of Scotch bagpipes. It is very uncomely to drink so large a draught that your breath is almost gone, and you are forced to blow strongly to recover yourself."

UNUSED THIRD OF WOMAN.

At Home She is Likely to Take Life Rather Easy.

One woman in this city thinks that it would be safe to say that one-third of woman's capacity goes to waste in the average home-making woman. Not necessarily because she is a shirker, but because her work is not particularly regulated; because she does it when she "feels like it." "Women need leisure" runs the saw, and the home-staying woman is in a fine way to help herself to it.

"I don't know that any speeding-up system for home women would be desirable," says the woman above quoted, "but I know it to be a fact that neither I nor any of my women friends are all used in our home-making efforts. We could, if we had to, do one-third again as much as we really accomplish. I think it is the unused one-third of the home women that is getting over into club and civic life.—New York Evening Post.

Just Like a Man.

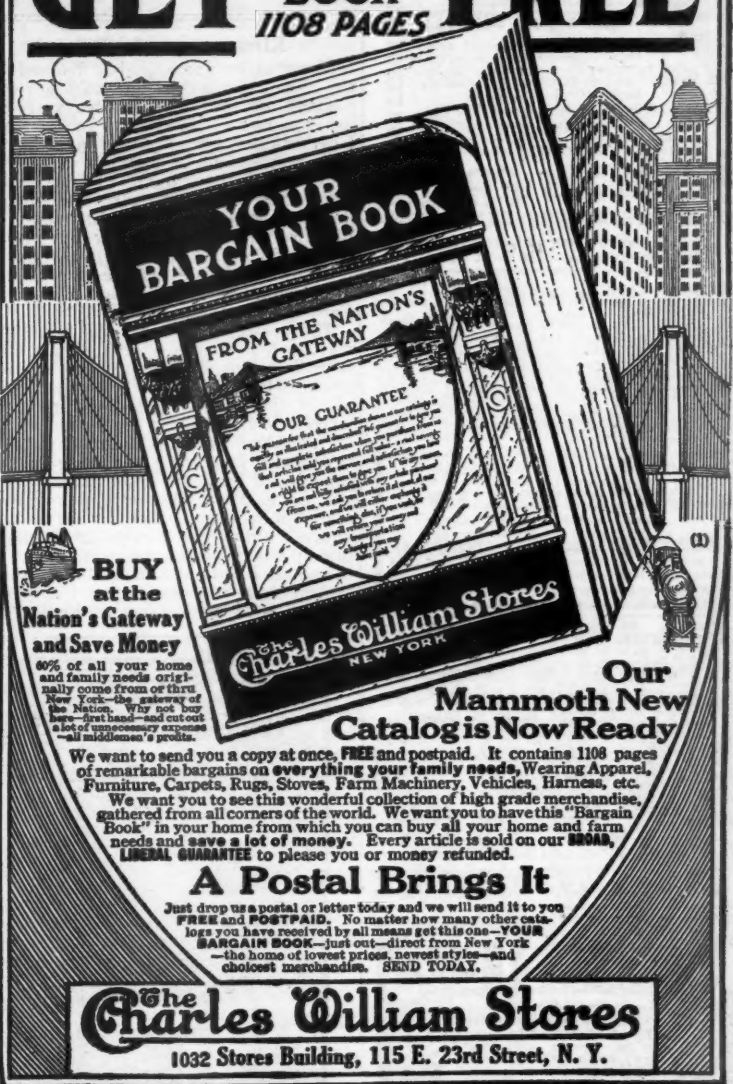
"One of the great troubles with you men," she complained, "is that as soon as you are married you forget your wives and turn all your attention to business. You have only one thought and that is to get rich. When a man is courting a girl he tells her that she is all the world to him. He leads her to believe that he is never happy unless he is where he can see her and hear the sound of her voice. He praises her beauty and treats her with the tenderest regard. He tells her that his one ambition is to make her glad, to be worthy of her love. Then the preacher says a few words, and what happens? In a little while he forgets that the sound of her voice is sweetest music to his ears; instead of giving up everything for her he becomes a slave to his business. Even when he is in her company he thinks of his business. While she speaks to him he is busy laying plans to increase his capital or enlarge his factory. He takes long trips for the purpose of getting more business, leaving her at home to pine in loneliness. What do you suppose would be the result if men would give up the all-consuming desire to get money and be lovers after marriage as they were before?"

"Well, I'll tell you," he replied: "my candid opinion is that the ladies would keep wanting electric runabouts and costly furs and grand opera tickets and diamonds and expensive gowns, just the same, and that—"

"There! That's just like a man. You never can discuss a thing without getting personal."—Chicago Record-Herald.

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## FARM DEPARTMENT



### Kindness on the Farm.

Never make unreasonable demands on the horse. Such demands, together with nagging and harsh-handed ways are the usual causes of balkiness. In any case, I never knew a horse to be cured by the extreme methods of coercion or torture that the ingenious minds of men devise, without producing a spiritless, broken, dejected creature that no man could take pleasure in owning or driving. Many horses will, in fact, fight to the last breath if the owner foolishly chooses that method of procedure, says M. G. Feint in Practical Farmer.

The better, and to my mind the only way, is quiet kindness, and, when a clash of wills comes, divert the horse's mind. This can best be done by some unexpected act of the driver. Get down from the wagon; go through the motions of nailing on a shoe or two; tap his hoofs smartly; take out a jack knife and slightly pare the frog of his foot; braid his mane and tail, or, as Mr. Yenna says, put a lump of dirt or snow in his mouth. Or get busy yourself about the harness or wagon, or pile up stones by the roadside. Then get in and ask him to go as a matter of course, and he will, nearly always. I saw this method used on a nervous, high-strung

on the thrasher, or else with baled straw, a great deal of which can be stored in comparatively small space. If the baling press can be put into operation immediately after threshing, and before any rains have injured the straw, at least all the loose straw around the edges of the stack can be worked up if there isn't storage room for the entire stack, and thus not only will this much more of the straw be saved but the main stack will also be left in better shape to keep during the rainy season. Baled straw occupies at least two-thirds less space than loose straw and it can be more easily and cheaply handled than it can in its loose state. The cost of shelter makes the baling of straw for commercial purposes a necessity, and it is just as economical to bale the straw that is to be fed out to stock on the farm. In every neighborhood there are usually several baling outfits that go from place to place, but the farmer owning an individual press will have the advantage of baling his straw, as well as his hay, at any time after harvest that he so desires. These crops can then be placed under shelter before a drop of rain depreciates their value for feed.

Happily, however, the time has passed in the middle West when many straw piles



Sorting peaches at the farm of William Pawley near Rochester, N. Y. Notice the big new barns freshly painted and the big straw stack, all of which items indicate prosperous farming, such as this section of the country is noted for.

animal, bought as an act of mercy from his last owner, who had fought him until with two or three ribs broken and his tongue cut half off, he was a sight for the humane agent. His new master doctored him up and when he began driving him left his whip at home. As often as the horse refused to go, and this he did frequently at first, the driver busied himself, or chatted with passersby for a time, then picked up the reins briskly and gave the word to go. Sometimes he had to try the third time. But patience and kindness won, and in a few weeks the horse had not a thought in his head but to go his best for his new master. Kindness to animals includes reason in the demands we make upon them, also generous feeding, quiet handling, cleanly surroundings, good bedding and comfortable shelter. All animals of the farm are kept for some surplus products of their bodies, as milk, eggs, meat, wool, or strength to be used in the performance of labor. Until their own physical wants are supplied, and the animal is free from fear of rough or violent usage, and is comfortable and contented, regarding his owner as a friend, there can be no profit for that owner.

### VALUE OF STRAW ON FARM. How to Keep it.

Every good farmer will make arrangements at threshing time to care for his straw in the best manner possible in order to save it for winter feeding and bedding for his stock, says Wisconsin Farmer. Any farmer who has any available room in the mows should fill it either with the loose straw, which can be done easily by aid of the blower attachment

are burned intentionally, nor is much straw sold. It is too valuable to the farm for any farmer to find any excuse for burning, wasting or selling it. Even the farmer who does not utilize his straw for feeding and bedding purposes usually lets the stock tear the stacks down and tramp the straw into manure, and eventually this finds its way back to the land that produced it. Of course, the full value of the straw is not realized when it is not made to furnish food and bedding for the stock before reaching the manure stage, but it is not wholly lost as it is when sold off the farm. In selling his straw a farmer is selling the fertility of his land at a very low rate, while in using it on the farm the fertility is maintained and kept available. In the long run more money is realized out of the straw where it is kept on the farm.

Even on a rented farm it is not profitable for the tenant to sell his straw, though the sum received for it may be quite large. If he will figure up the returns from feeding the straw to his stock and the value of the manure that is drawn back to the fields, he will realize that it will pay him to put the straw back on the land that produced it. Where the straw, and possibly the hay, are sold from a farm year after year, that farm eventually runs down, and it then requires much time to get it back to its former condition. This is the trouble with many rented farms today.

Life is not so short but that there is always time enough for courtesy.—Emerson.

### Ol' Nutmeg's Sayings.

Written for Green's Fruit Grower by Joe Cone.

Big feelin's usually hev small results. Mischief makers are soon out uv a job. The man who is fixed up fur winter is well fixed.

Borrowin' money an' borrowin' trouble too frequently are elus relations.

Nobuddy should attempt to play with fire at the presunt cost uv fuel.

Short-sightedness can't be improved with glasses—it needs home treatment. He who saves up money fur a rainy day kin afford to look pleasant.

Man is also known by the stock he keeps, ez well ez by the compenry.

This is a free country, but they ain't much in the country thet's free.

Some folks fall in love so easy they don't know whether they've landed or not. Sometimes the jobs you put up on other people come down on your own head.

Even a dorg in the manger is apt sooner or later to git the hook.

A kitten git's its eyes open in a few days; lots uv people never do.

The man who ain't willin' to try anything new is old an' out uv date.

A stiff upper lip is better than a stiff laig fur takin' you through the world.

It may be all up hill goin' up, but it's all down hill comin' down ag'in.

Good cheer will git you in where a crowbar an' a jimmy would be uv no avail.

Don't turn over a new leaf unless you intend to hev a good footin' at the bottom uv the page.

If you can't say anything good about a

man it is better to talk about the weather. The feller who drinks himself to death hezn't made any impression on the quantity uv liquor in the world.

In some places it ain't safe to leave the latch string out 'cuz they's a danger uv losin' the string.

Jest becuz a wummun can't throw a stun straight is no sign she can't make a bull's-eye ef she sets out to do it.

They's jest ez much uv a Santy Claus now ez they ever wuz, an' they's allus been jest ez much uv a one ez they is now, so there you be!

Ef some fellers in the neighborhood are known by the chips they make, it is a purty good sign thet lots uv the people in town don't know very much about 'em.

Ef you should happen to git a slushy snowball somewhere between your ears an' coat collar mebbie it is on'y a return complermunt fur a like favor thet you passed along when you wuz a boy yourself.

Rubbish and crop refuse on the cultivated fields serve as a place for the hibernation of insects and afford sufficient food for late maturing forms to develop. All debris and refuse tops and roots of this season's crop should, by all means, be collected and burned. Such pests as cutworms, slugs, root maggots, plant bugs, plant lice and many forms of leaf eating insects will be destroyed, and of those remaining, their chances for passing safely through the winter are considerably lessened.

It is possible that the orchard might make a good pasture, but it is not advisable to make a pasture of the orchard.

Iron growth a less need question been disc ing our a and pot more co phoric a Robison In plain that wit nature that it give econ yet this advanced facts in t Line plant gr ingly in nutrition tion, but nutrition as a ferti occupies in relatio nitrogen, potash. influence purely an enter in s bination of the pl this degr Its third relates to its value A great press has portance lavish ha lime, as v course an tive natu this prod exploitati same way of lime w sationally swing of into disus There is matters t with confi We refer ment stat sation ma farmer o point to t stations o caution in They hav has been tion. In to the exp counsel in we find th tive use o devoid ag In case burned or may be sl elsewhere slowly an about 32 lime has n In the lat may be v water is p result will factory m Each co manner su pile. It is the whole since it in a more th mass of li tributed b ed before to remove or other f in this w from 24 to Another is to disti pounds, 2 if one wis per acre. be thrown days the li sufficiently stone boat latter. If water sho before the It is of the lime ev be harrow Shel Do not machines c ment, and weather t making th heavier cl Dew, rain deteriorati than ordin ments at field with No progrc Farm and



### The Liming of Soils.

Iron is clearly as essential to plant growth as is potassium, and calcium is no less necessary than is phosphorus. The question here comes to us, why have we been discriminating all these years centering our attention on nitrogen, phosphorus and potassium, or as they are perhaps more commonly known, nitrogen, phosphoric acid and potash, says Floyd W. Robison in Orchard and Farm.

In plain language, it has been conceded that with most of the other elements nature has provided such an abundance that it is not necessary for the farmer to give economic consideration to them, and yet this statement while being the one advanced, does not strictly tell the exact facts in the case.

Lime is absolutely indispensable to plant growth. It exercises an exceedingly important influence upon plant nutrition and not only upon plant nutrition, but through the plant upon animal nutrition. We do not class lime directly as a fertilizer. By this we mean that it occupies a position somewhat different in relation to plants and soils than does nitrogen, for example, phosphorus, or potash. Lime exercises an important influence as an administrative agent, purely and simply, in the soil. It does enter in small quantities into actual combination with the organic constituents of the plants and consequently it is in this degree likewise a true plant food. Its third important influence, however, relates to the soil itself and here is where its value is best noted.

A great deal has been written, and the press has spread the doctrine of the importance of lime generously and with a lavish hand in the last few years. With lime, as with commercial fertilizers, our course and advice must be of a conservative nature. With regard to the use of this product, lime, it is not new in its exploitation. Years ago, in much the same way as at the present time, the use of lime was almost, we might say, as sensationally exploited, but with the return swing of the pendulum, it gradually fell into disuse.

There is a source of information on these matters to which the farmer may turn with confidence for a conservative opinion. We refer here to the various state experiment stations whose fundamental organization makes them the advisers of the farmer on these various matters. We point to the fact that it is the experiment stations of the country that have advised caution in the use of commercial fertilizers. They have recognized their value but it has been devoid of sensational exploitation. In a similar way we may now turn to the experiment station for advice and counsel in the use of lime, and here again we find the farmer advised in a conservative use of this product, which advice is devoid again of sensational exploitation.

In case one wishes to apply ordinary burned or builders' lime to the land, it may be slaked on one side of the field or elsewhere in advance by sprinkling very slowly and carefully over each 100 pounds about 32 pounds of water, provided the lime has not been long exposed to the air. In the latter case, the quantity of water may be very slightly decreased. If the water is poured on quickly the wished-for result will not be accomplished in a satisfactory manner.

Each cask can be sprinkled in the manner suggested as it is dumped on the pile. It is well afterward to throw over the whole pile a thin covering of loam, since it incloses the moisture and causes a more thorough slacking of the entire mass of lime. In any case, if it is distributed by a spreader it should be screened before it enters the spreader in order to remove any strings, hard lumps, stones or other foreign material. Lime slacked in this way is usually fit for use within from 24 to 48 hours.

Another method of applying the lime is to distribute the lime in heaps of 25 pounds, 21 feet apart in each direction, if one wishes to apply about 1 1/4 tons per acre. The moist earth should then be thrown over the heaps and after a few days the lime will be found to have slaked sufficiently so that it can be taken on a stone boat or drag and spread from the latter. If the soil is very dry a little water should be sprinkled over each heap before the earth is thrown over it.

It is of the utmost importance to have the lime evenly distributed, and it should be harrowed into the soil.

### Shelter for Farm Machines.

Do not forget that the implements and machines on the farm represent an investment, and that when exposed to the weather they deteriorate rapidly, thus making the upkeep and original cost a heavier charge against the equipment. Dew, rain and sunshine may cause greater deterioration in expensive implements than ordinary use. To leave the implements at the end of the rows or in the field without shelter means great loss. No progressive farmer can afford it, says Farm and Ranch.

Binders, mowers, hay presses, tractors, silage cutters and other machines represent considerable capital, and it is economy to shelter and care for them when not in use. A tool-shed costs little compared to the risk of protecting the implements. The shed is really insurance upon the implements from sun, rain and rust.

Even the small tools, such as single stocks, shovels, sweeps, hoes, spades, double shovels and cultivators, need shelter. And there is another advantage besides the loss in deterioration, that is in saving time. When the implements, large and small, are always left in the tool-house the hand knows where to find them and does not lose time hunting for the wrench, the shovels, the sweeps, the oil-can or the garden plow.

### Big Wheat Field.

Henry Vincent, the Eureka flat wheat grower, who harvested 12,000 acres last year, has increased his holdings until this season he will have 32,000 acres in spring and fall wheat, the largest wheat farm in one piece in the United States. All the wheat is up and the prospects are good. To manage such a farm requires executive ability and untiring ambition. Vincent, a six-foot four man of exemplary habits, is on the job sixteen hours every day. He rarely takes more than five hours' sleep, says N. Y. Sun.

Automobiles, auto trucks and modern steam machinery are used on this wheat farm, and a stone office building houses the force of clerks who attend to mail, payrolls and other items.

To seed this extensive wheat farm there were used thirty-nine drills and forty-two harrows and five steam plows, each with a capacity of sixty acres a day, to turn over last year's stubble. On the farm are 600 spans of horses and mules worth from \$450 to \$500 a span. There are employed the year round 250 men, eighteen women and thirty boys and girls. At harvest time the force is tripled for three months.

### A Plea For the Horse.

In the Team Owners' Review, among many other paragraphs that deserve a wide circulation wherever the horse is found as man's servant and helper, are the following:

"Horses are not deaf, so do not shout at them. Neither are they blind. Their hearing and sight are just as keen as ours, and very often keener, as they frequently see and hear things long before we can see and hear them.

"Axle grease is cheap, so do not wait until your axle gets dry before giving it grease. Besides, it injures the axle to let it get dry, and makes double and treble work for your horse.

"When you see a horse cruelly treated call a policeman and have the driver arrested. The humane laws of nearly all the States make it obligatory upon the policeman to arrest the offender, after a citizen has made a complaint to him.

"Treat the old horse kindly and considerately, as you would an aged man or woman, and do not expect him to 'get up' as you would a 2-year-old. Their bones, muscles and joints become stiff, just the same as yours will if you live long enough. Always be doubly kind to a poor old horse. Treat him as you would like to be treated if you were old enough to be a great-grandfather."

### Ancient Methods of Cold Storage.

Dr. Frank N. Meyer, plant hunter for the Department of Agriculture, has recently made an interesting study of cold storage methods of ancient times. He finds that the Chinese had a method of keeping grapes from one year to another—an idea certainly unknown to ourselves—by storing them in deep, dugout cellars, where they were kept cold by placing baskets of broken ice among the baskets of fruit.

It has been shown that the Chinese were familiar with principles and practices of cold storage many centuries, and probably thousands of years ago. It is a common practice of fruit merchants in China to keep perishable fruits in fresh condition by the use of large and very thick earthen jars.

A quantity of broken ice is placed in the bottom of each jar, and upon this is placed a woven wicker basket in which the fruit is kept. The jar is closed with a wooden cover, which often has a strip of felt around it, to make the insulation as complete as possible. It is claimed to be remarkable how this simple device will answer the purpose.

Thousands of years ago a leaf fell on the soft clay, and seemed to be lost. But last summer a geologist in his ramblings broke off a piece of rock with his hammer, and there lay the image of the leaf, with every line and every vein and all the delicate tracery preserved in the stone through those centuries. So the words we speak and the things we do today may seem to be lost, but in the great final revealing the smallest of them will appear.—James Russell Lowell.

### TWO TYPES OF DRINKER.

One is Stupid and the Other Has Power of Imagination.

There are, broadly speaking, two types of drinkers. There is the man we all know—stupid, unimaginative, whose brain is bitten numbly by numb maggots, who walks generously with widespread, tentative legs, falls frequently in the gutter and sees in the extremity of his ecstasy blue mice and pink elephants. He is the type that gives rise to the jokes in the funny papers.

The other type of drinker has imaginative vision. Even when most pleasantly jingled, he walks straight and naturally, never staggers nor falls and knows just where he is and what he is doing. It is not his body, but his brain, that is drunken. He may bubble with wit or expand with good fellowship. Or he may see intellectual specters and phantoms that are cosmic and logical, and that take the forms of syllogisms. It is when in this condition that he strips away the husks of life's healthiest illusions and gravely considers the iron collar of necessity welded about the neck of his soul. This is the hour of John Barleycorn's subtlest power. It is easy for any man to roll in the gutter. But it is a terrible ordeal for a man to stand upright on his two legs unswaying and decide that in all the universe there is for himself but one freedom, namely, the anticipating of the day of his death.

## Sweet Peas



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15-cent packet of Burpee's Orchid, the most beautiful hellemauve; one regular 10-cent packet (40 to 50 seeds) each of BEATRICE SPENCER, deep pink; GEORGE HERBERT, rosy carmine; Mrs. C. W. BREADMORE, cream edged rose; STIRLING STENT, best glowing salmon-orange; also one large packet (90 to 100 seeds) of THE NEW BURPEE BLEND OF SURPASSINGLY SUPERB SPENCERS for 1914, which is absolutely unequalled. With each collection we enclose our Leaflet on culture. Purchased separately, these six packets would cost 65 cents.

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Cabbage—Perfection, worth 15c	

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## The Dry Farming Congress Was Not a Congress of Dry Farmers.

The American farmer, since first he stretched his hand out to McCormick for his reaper, has stood apart from other nations because of his progressiveness. He has stood apart, also, because of his ingratitude to the soil upon which he depended. Land which in England or France has been yielding bountifully for a thousand years would have been hopelessly depleted in a generation by the average methods followed in this country.

The Dry Farming Congress, from the speeches of the illustrious agriculturists who were there, to the long rows of soil products, was an indirect but deadly protest against American carelessness in farm methods. It was shown at Tulsa that to a man who is familiar with the general farming from Florida to the Dakotas, dry farming is nothing more nor less than applying to land which suffers from lack of rain, principles which produce the best results when applied to land enjoying plenty of rain.

It was a nation-wide lesson on good farming. It proved that the successful rules of good farming were the good rules of successful farming. The pioneer settlers on practically desert land were left to demonstrate by practical results what farm journals, government schools, and the service bureaus of the big machine companies have tried to teach, that the fundamentals of farming are deeper plowing, better cultivation, more animal fertilizer, and better seed selection.

Care of Swine:—Two things which should be avoided with swine in cold weather are, first, do not let them sleep in or upon heating manure, because they become warm and then rush into the cold air, frequently contracting colds, coughs or severe pulmonary diseases that are sometimes fatal; second, bed them well in dry quarters where there is no draft of air blowing across them.

The cold season will prove severe on them, unless they are kept warm and dry. Warm, well ventilated quarters should be provided. Ample bedding will be a great boon at such times. The bedding ought to be kept dry, which will call for frequent changing. Never bed with damp or wet straw. In cold weather, wet or damp straw is easily overlooked, as the water it contains may be frozen. The heat from the swine will soon thaw out any frost or snow that is in the bedding, making it very harmful to use.

## Feeding Birds in Winter.

Prof. H. A. Surface, State Zoologist of Pennsylvania, states that Mr. Mann, a pear grower of Rochester, N. Y., told him one year the pear tree psylla had destroyed his entire crop, and he thought that there were no prospects for a crop the following year. But nuthatches came and worked in flocks in his orchard all winter, and in the spring, he could find hardly an insect. Thus these nuthatches saved him thousands of dollars in one winter.

In addition to the insects eaten the destruction of vast amounts of weed seeds by our winter birds, prevents the growth of many troublesome weeds in spring.

It is apparent from these examples that if a little care is taken to attract the birds around our farms in winter, by providing food and protection, they will more than repay us for our time and trouble by the destruction of noxious pests.

Some birds eat chiefly animal matter and some vegetable matter; so both should be provided. Suet, unsalted bones with meat, fat or tallow attached, beef and mutton tallow, fat, and pork rinds are all good. Salt meat however is usually considered bad food for birds, although some species will eat it. As suet is easily crumbled and wasted, it should be fastened to the tree not by nailing, but by wrapping several times with a string, or by placing a piece of poultry wire over it. It is a good idea to put the food in trees, known to be infested with insects.

Sufficient grain may usually be found on the barn floor mixed with the chaff to feed a large number of birds during an entire winter. Some farmers grow sunflowers and Japanese millet for their birds. The author has found a combination of sunflower seeds and suet very good. Water should also be provided.

The food may be exposed in various ways. Almost any place will do, but one should be chosen if possible where the birds will have some protection from cats. A window shelf placed out of their reach will also furnish excellent opportunities for observing and studying the birds.

For the shier species that will not come close to the house, food may be provided in a large dry goods box facing the South, or scattered under briars to afford some protection from hawks. An open place under a barn or other outbuilding, is also good. Quail will feed here as well as the smaller birds, provided that the situation is not too close to the house. Bobwhite is one of our most valuable birds in the destruction of weeds, and insect pests, and should be fed carefully.

The author is confident that anyone who will provide food for our native birds during winter, and will give them proper protection from cats and English sparrows, will find himself well repaid for his efforts, not only by the excellent opportunities given for observation and study at close range, but also in a practical way, by the large numbers of injurious insects and weeds which will be destroyed by his feathered boarders.

Next month, an article on the food of our woodpeckers.

## Nuts and Their Uses as Food.

The constantly increasing consumption of nuts throughout the United States augurs well for a better appreciation of their food value. The time when nuts were considered merely as a luxury, or as something to be eaten out of hand at odd times, is rapidly passing away, says California Farmer. In earlier days the native hickories, butternuts, walnuts, chestnuts, pecans, and many other nuts found in the United States, were to be had in country regions for the gathering and were of no commercial importance. On the other hand, the English walnuts (to give them their most common name), almonds, coconuts, etc., brought from other countries, were relatively expensive luxuries.

Some nuts, like the native hazelnut and beechnut, still have practically no commercial value, and, though palatable, are almost never offered for sale, doubtless because they are so small and difficult to gather in quantity. The chinquapin, a small nut allied to the chestnut, finds a limited sale in southern cities, but is doubtless seldom if ever seen in other markets. In general, however, conditions have changed and our principal native nuts are now staple market commodities and bring good prices. At the same time, owing to changes in market conditions, and to the growing of foreign nuts in quantity in this country, the price of the imported nuts has dropped so that they are well within the reach of the majority.

## IMPORTATIONS OF NUTS.

From available statistics it appears that in 1905 the total quantity of almonds, coconuts, Brazil nuts, filberts, peanuts, walnuts, and other nuts, shelled and unshelled, imported into the United States was, in round numbers, 86,238,000 pounds, with a value of \$6,138,000. In 1905 the total almond crop in California reached 4,200,000 pounds and the walnut crop 12,800,000 pounds. The richest yield of peanuts was reported from the Southern States, chiefly Virginia, Georgia, and Tennessee, and amounted to 225,000,000 pounds.

## Horse Feeding.

No horse requires more than one full feed of hay once in twenty-four hours. When farm horses are working every day they are subject to just this condition, because they have not time either at their morning or noon meal to eat too much hay, but in winter they often stand all day with hay before them all the time.

A horse to be in perfect health should have the stomach emptied of the previous meal for two or three hours before he is given another. If such is not the case, digestion will not take place in a perfect manner, and disease will likely result. There is a remarkable sympathy between the stomach and the lungs, because of the fact that the same nerve trunk supplies nerve force to both organs. When the stomach is deranged from improper feeding the lungs are liable to become sympathetically affected, and heaves often result. Care should also be taken that a horse should be fed no dusty or musty hay. This dust is as light as air, and the horse in breathing draws it right into the lung tissue with every breath, and this substance, being an irritant, is very prone to develop heaves. If no better hay can be obtained, the dust should be laid by sprinkling with water, when the horse will not breathe it, but it will be swallowed with the feed and probably do him no harm, but when at all possible only bright, clean hay, free from dust, should be fed to horses. Again, no horse is in fit condition for active exercise with the stomach distended with hay, because the stomach, situated as it is, right behind the lung space, if full, bulges forward into the chest to such an extent that the lungs have not room to properly expand, and cannot perform their functions properly; and anything that interferes with the function of the lungs predisposes to heaves. In many cases if farmers would feed one-third less hay to idle horses in the winter months they would come out in the spring in better condition, and we would have fewer cases of heaves in the country than we have at present.

October 30, 1913.

I intended to add that I would not be without Green's Fruit Grower for twice the amount of the subscription. —Mrs. E. L. Harrington, 465 W. Gr. Blvd., Detroit, Mich.

## Potato Profits

depend largely on how the crop is planted. Every skipped hill is a loss in time, fertilizer and soil. Every double wastes valuable seed. It means \$5 to \$50 per acre extra profit if all hills are planted, one piece in each. That is why

## IRON AGE 100 Per Cent Planters

often pay for themselves in one season on small acreage. They also plant straight, at right depth, 12 to 24 inches apart.

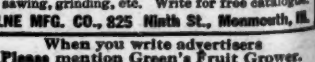
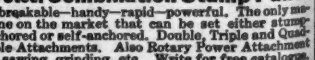
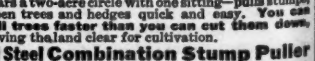
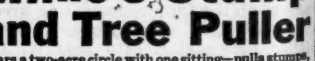
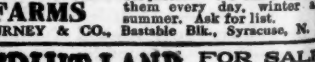
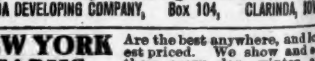
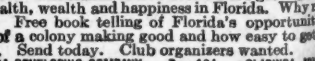
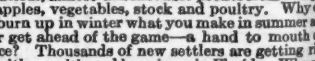
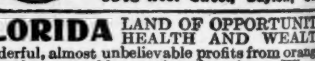
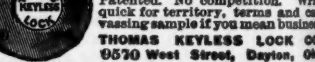
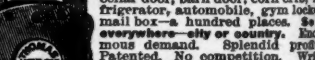
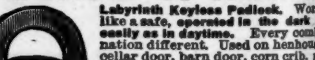
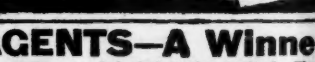
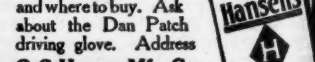
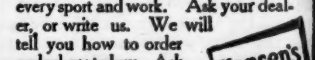
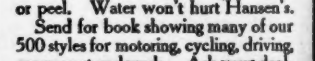
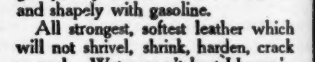
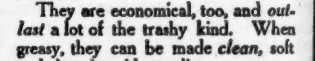
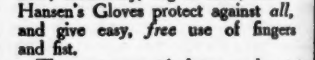
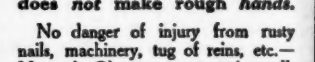
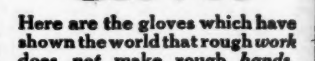
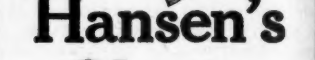
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### Causes of Fires on Farms.

The following figures as to the causes of fires on farms were compiled from the returns of 14 insurance companies in Massachusetts for the five years up to 1905. A study of these figures will show that many of these fires were due to causes which could have been prevented by trifling alterations or ordinary precautions.

Causes	No. of fires	Loss
Ashes in wooden receptacles	6	\$2,365.10
Boilers (portable).....	4	1,023.13
Brush and bonfires (including forest fires).....	13	4,440.60
Children and matches.....	24	4,870.56
Chimneys (including defective flues).....	273	76,742.45
Exposing buildings.....	20	4,233.41
Fireplaces and grates.....	20	350.20
Incendiarism.....	99	53,972.45
Kerosene oil stoves, lamps and lanterns.....	90	21,688.31
Lightning.....	405	44,563.32
Smoking.....	14	2,329.72
Sparks on roof.....	37	774.12
Stoves and furnaces (including heating boilers, defective pipes, etc.).....	52	10,325.25
Tramps.....	7	6,420.82
Unknown causes.....	343	147,439.04
<b>Total.....</b>	<b>1,407</b>	<b>\$388,538.48</b>

### As to Pruning.

The pruning of the orchard the second season after planting is essentially the same as that of the first, and consists simply of cutting back the new growth where the growth has made more than 18 or 20 inches in the previous season, and taking out all branches except those that are to be permanent scaffold limbs, says Nebraska Farm Journal. If three branches were left at time of setting out the two-year-old tree, the second spring pruning should consist in removing all but two branches on each of these original three scaffolds.

Subsequent pruning of a young orchard is practically the same operation. This pruning is usually done in the late winter or early spring, although summer pruning in many places is desirable, and it is always desirable to head back too rampant growth at any time and to cut out the sap sprouts. A little time spent now and then in pruning the young orchards will save a great deal of time later on, because it is all-important to have the young tree headed a desirable height, and to so control the pruning as to get the shape of the tree that is most desired, and this can be almost entirely controlled by proper pruning during the first two or three years of a young tree's growth.

Many of our old orchards over the country might be profitable were it not for the fact that the bearing surface is so high above ground that the expense of pruning, spraying, thinning and picking make profitable fruit growing out of the question. These orchards were established before these operations in orcharding were necessary, and it would be unwise at this stage of orcharding in the United States to make the same mistakes that were made by a past generation. Our best growers differ somewhat as to the style of tree most desirable.

The two most common styles are known as the pyramid and vase form. In the pyramid style of tree, a leader is left in the center which is allowed to grow upward and send out lateral branches higher up, thus forming what might be called a two-story tree. This gives somewhat more bearing surface, but is open to the objection that if canker or blight attacks the main leader, the tree is ruined, and is also open to the objection that much of the fruit on this central stem is above the ground too far to be easily handled, and there is always a tendency in nature to throw the plant food to the farthest extremity, consequently this leader gets the larger part of the growth of the tree.

In the vase form, the center is kept well open, so as to force the growth laterally. This causes the tree to cover more ground and as the tree grows larger, the tendency is for the branches to settle by their own weight, thus keeping the bearing wood near the ground, and also allowing the sun and air to get into the center of the tree. With the latter style, it is essential to have greater space between trees than where the pyramidal style of pruning is followed. The vase system is the one most used, and it usually gives the largest amount of well-colored fruit.

### PRUNING OLD TREES.

Pruning mature trees is more of an art than pruning young trees. Of many thousand people who pretend to be expert pruners, few ever learn to do their work efficiently and quickly. The essentials for pruning an old tree are that one must first see the tree as it should be after the pruner has finished his work. If the pruner's imagination is not sufficient to do this he never will be able to secure the desired end. The first thing in pruning an old tree is to begin at the top rather than the bottom. It is always easiest

to begin at the bottom of a branch and prune off the laterals until the end is reached. This gets just the condition which we do not want, that of having all the bearing wood at the extreme ends of the branch instead of having it equally distributed along the branch; hence the necessity for beginning at the outside of the tree and pruning down or in.

In most old trees, all that is necessary in pruning is to remove from one-half to three-fourths of the wood, but do it in such a way that the remaining wood will be evenly distributed over the whole surface and throughout the center of the tree. Beyond this, it is difficult to give directions for pruning. Some of the details that must be observed are: First, that the cut must be made parallel to the branch from which it is cut, and as closely as possible to the branch which is left. In other words, stubs or hatracks have no place in a pruned tree. Many pruners think that injury will result from making a close cut. A little observation of any tree which has ever been pruned will show, however, that the close cut will readily heal while the stub can never heal.

Massachusetts has a law that compels every property owner to care for his fruit trees so that they may not be a menace to others. Every state ought to have this law and also one that would compel the owner of fowls to keep them in such style that they would be free from disease so that they might not transmit the same to other flocks.

### Used His Auto to Turn Cider Mill.

Ferdinand Blick, farmer and fruit grower, living just west of Lansing, Mich., has one of the finest apple orchards in the state. The perfect fruit only is shipped, and the second grade apples are used for cider.

Blick had been running the cider mill for years with a stationary gasoline engine. This season the uselessness of the engine was not discovered until everything was in readiness for a run. Blick did not want to stand the delay of a trip to town for another engine, and decided to try his Regal car.

The car was jacked up into position near the cider mill. A rear tire was then removed, the belt placed over the flat rim of the wheel and the motor started. It worked perfectly. Blick says he will not buy a new engine for the mill so long as he has the Regal.

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Read what Professor H. E. Van Deman, Ex-Pomologist of the United States Government, and founder of the Pomological Division of the Agricultural Department at Washington, and the highest horticultural authority in the world, said in 1902.

"I spent six days in Patrick County looking at the land, both wild and cultivated, for the purpose of informing myself of its value for fruit culture."

"The soil is red or brownish clay until the higher elevations are reached, where it is rich in potash and phosphoric acid, but is benefited by the addition of nitrogen. This is easily and cheaply supplied from the air by growing cow peas which also adds humus by the decay of their roots and their tops where the crop is not cut for hay."

"The soil of the highest elevation is gray or grayish black, and is composed of disintegrated rock and the humus that has been accumulating for ages. I have seen it so loose and deep that a stick could easily be stuck a foot or more deep. It does not seem to bake easily, and in some places has considerable loose rock mixed with it."

"The people are waking up to the great advantages they have in the way of choice soil and climate for the production of

parts that are very rough and rocky, one can hardly go amiss in planting apple orchards on almost any tract in that locality. The prices already obtained for the fruit, even as far back as twenty miles from the depots, is evidence of what it is sure to bring in the future. It was a notable fact, as I saw the apple orchards, most of which were poorly cared for, that they were unusually vigorous and healthy; and the thought kept constantly recurring to me, that, if they did so well under comparative neglect, what would they do with such treatment as they should receive? This is a region that fruit growers will do well to investigate, for I would not fear to plant there myself."

"And the soil is splendid, being just such as has produced the best apples, and other fruits as well, that have graced the markets of the world. Even the fields that are cleared are not impoverished."

**Apples Bring \$300 an Acre.**  
George Foster Kent, of Troy, Kas., will clear over \$1,500 this year from five acres of Jonathan apples, or 180 trees. About three years ago he bought a neglected and rundown orchard that adjoined Troy on the north. Neighbors believed he had made a bad deal, but he set about learning the orchard business, and trimmed, sprayed and intelligently cared for his orchard.

Prayer is man and woman at their best. We are never so sublime as when we make our prayer. We have in that one act shown that we are not children of the ground, but children of the sky. Prayers which have been offered by devout souls are the ruts worn in the road that leads to God. They are always the soul's highest form of utterance.—Bishop Wm. A. Quayle.

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In describing the fruit, the word "base" means the part of the apple at the stem end; "apex" the portion at the blossom end; "cavity" is the depression around the flower end; "calyx" the so-called flower in the apex of the apple. The general form is referred to as being "round," "oblate," "conical" and "oblong." As regards size, apples are said to be "small" when two and one-half inches in diameter or under; from two and one-half to three and one-half inches they are termed "medium", and above this "large."—Rural Californian.

The best results in growing walnut trees have been secured by planting the nuts in the fall after removing the hulls and covering them some three or four inches deep, being certain that the soil contains sufficient moisture to insure opening of the nuts by the action of winter frosts, says Field and Farm. The nurserymen sometimes stratify the nuts in a box of sand, placing first a layer of sand two or three inches thick, then a layer of nuts and alternating nuts and sand. Care is taken to keep the sand moist throughout the winter and the box in a location where it will be exposed to the action of frost. The nuts can be removed early in the spring and planted where desired and the danger of loss from nut loving animals is obviated. The walnut will not transplant very readily so the nuts must be placed where the trees are to stand. Every ranch has a hundred places where these trees could be grown without bothering anything and it ought to be done.

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Power.  
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It is Hammerless with Solid Steel Breech (inside as well as out)—Solid Top—Side Ejection—Matted Barrel (which costs \$4.00 extra on other guns)—Press Button Cartridge Release—(to remove loaded cartridges quickly from magazine without working through action) Double Extractors—Take-Down Feature—Trigger and Hammer Safety. Handles rapidly; guaranteed in shooting ability: price standard Grade "A" 12-gauge gun, \$22.60; 16-gauge, \$24.00.

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**Banana Apple in Idaho.**  
Editor Charles A. Green of Green's Fruit Grower, after many years' experience with the Winter Banana apple, classes it as one of the most desirable of all the hundred varieties that he is growing on his fruit farm. In quality he thinks it almost ideal, and as a keeper, it is one of the best with him, says The Gem State Rural.

With this, the third season's experience with the Winter Banana, and several years' observation of it, the editor of the Gem State Rural is inclined to concur in Mr. Green's estimate of this variety.

While we have always advised caution in regard to planting it extensively, in a commercial way, in the Pacific Northwest, insisting that it should still be regarded as in the experimental stage, as a commercial variety here, each season's experience and observation cause us to think better of it, both for the hardiness and quality of the tree, and the size, beauty, keeping qualities and excellence of the fruit. The tree seems as healthy as any in our orchard, and so far the fruit has been as little affected by the apple worm, although of course, we expect to spray all of our apple trees, and so this may not be considered of much importance. But it is certainly a high quality apple of undoubted merit.

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Orchard Topics.

During the dormant season moss can be cleaned from fruit trees by spraying with concentrated lye, using a pound to six gallons of water. This will make the bark hard and brittle and clean.

Rabbits can be prevented from gnawing orchard trees by the use of the following mixture: Take one-half gallon carbolic acid, 4 pounds of sulphur, 2 gallons soft soap and 32 pounds of lime. Mix the soap with enough water to slack the lime, then while hot mix in the sulphur and acid. If applied about the first of April, it will act as a preventive of borers, says Pennsylvania Farmer.

The "trimming up" plan is the best for old orchards. The bottom limbs should be cut off to a point three or four feet from the ground; then the ends of the more lengthy branches should be cut off.

While there is no sure cure for blight in pear trees, there is a possibility of saving the trees by properly cutting off all branches which are the least bit affected.

Some peach growers believe in sod culture. During the time the trees are growing the soil is worked, and a clover crop is sowed in fall and plowed under early in the spring. It is a mistake to leave clover crops until they suck too much moisture from the soil at a time when it is required by the trees.

The best time to scrape old bark off apple trees is on wet days. Care, however, must be taken not to injure the live bark.

Trees should never be planted until the ground is ready; neither should they be planted in a soil that is not thoroughly underdrained and enriched before planting.

For covering cuts on trees, use the

other counties more or less contributing, and is the largest fruit belt in the United States, 150 miles long and 25 miles wide, producing one tenth of all apples grown in the country. In this area, equal to nearly the domain of Montenegro, Wayne county is the eastern center of activity and Orleans the western center. That county has the largest acreage of apple orchards to the square mile and the largest production of apples in proportion to its area of any county in the world. It is not idle conjecture to assert that the last ten years have literally transformed the entire section.

Times of Storm.

By Raconteur.

"When the night wind howls in the chimney cowl and the bat in the moonlight flies, then the man who dwells in the sylvan dells is prudent and sane and wise," remarked the wild man of the woods, as he combed several toadstools out of his whiskers. "Something happens every day to convince me that I was as wise as a serpent when I fled from the busy haunts.

"Last night it rained in several dead and modern languages. The way the water came down would have made Noah sit up and wonder whether things were drifting. I lay on my rude couch in my cave and heard the tempest rage, and hadn't a care in the world. If old Jupe Pluvius was determined to break all records, it made no difference to me. A great calm possessed my soul as I thought of the unfortunate married men in town. I knew exactly what they were doing, comprehended just what they were suffering, for I have been there.

"I am a married man myself and a proud and beautiful woman places a



Interior view of cold storage house of C. Allis, Medina, N. Y. This is the new ammonia process, as I understand, brought about by machinery rather than by the storage of ice.

following mixture: Melt resin and warm a little crude petroleum in separate vessels, pouring into a third vessel three parts resin to one of petroleum. This will seal the wound until grown over. The mixture will not run in warm weather, nor will it crack in cold.

Shallow cultivation must be done in the plum or cherry orchard so that no roots will be broken. Broken roots will send forth shoots that sap the life of the trees.

An old fruit grower uses a pick in the orchard, and deems it his best tool. When the ground around the apple trees is hard, he sinks the pick eight or ten inches into the soil and merely pries the dirt loose, without disturbing the roots at all.

August is the time to look for borers. The soil around the stems of fruit trees should be dug away to the depth of three inches, and the bark scraped with a knife. Should any sawdust or exuding gum be found, it is time to get to work. Dig out the borer and wash the uncovered parts with a mixture of soft cow dung, lime, wood ashes and a little crude carbolic acid. Then put back the soil.

A wound made by cutting off a limb close to the trunk of the tree will soon heal over, but a wound made by cutting off the limb two or three inches from the trunk will lead to decay and often causes the death of the tree.

Diseased wood can never again be made new. It should be cut off and another shoot allowed to grow. There is danger of losing a tree by allowing diseased wood to remain on it.

Alvah H. Pulver says, the apple is the populator of Ontario's south shore. It is peopling a vast tract, dedicated by the tempering and chill extracting influences of the lake to the culture of America's king fruit—filling the land with happy, hustling orchardists and sending realty values skyward in leaps and bounds. This area, so conducive to apple propagation, embraces Wayne, Monroe, Orleans and Niagara counties, with three or four

lamp in her window every night, hoping that it will guide my wayward steps to her door. She is the best and noblest representative of her sex, but, rather than live with her again under the same roof-tree I would see my foot cleave to the roof of my mouth.

"Finally there came a night when I was profoundly interested in a newspaper story. Nature began putting on the old familiar three-ring performance and my wife went up in the air as usual. She wanted me to shut all the windows and go sleuthing after the barrel, and see that the cow was safe in her shed, and all the rest of it, and I rebelled. I told her flatly, yet courteously, that I wasn't going to be flimflammed again. The elements had handed me more gold bricks than I needed in my business. She gave me one long reproachful look and went ahead and did all those chores herself.

"And that night, my son, it rained as it never rained before. All kinds of hard and soft water came down, and on the following morning, when I saw the expression in my wife's eyes, an expression of mingled triumph and reproach, I felt that the parting of the ways had come. No longer could I live in the same house with a woman who looked at me like that. So I put on a pair of overshoes and a rubber sunbonnet and waded away from the busy haunts to the deep tangled wildwood."

Calming Her Fears.

A woman hired a taxicab. The door of the cab was hardly closed before the engine started with a jerk, and the cab began to race madly along, narrowly missing lamp-posts, trams, policemen, etc. Becoming frightened, the woman rapped on the window of the cab, and said:

"Please be careful. This is the first time I ever rode in a taxi."

The chauffeur reassured the passenger as follows:

"That's all right, ma'am. This is the first time I ever drove one!"

# Who Gets The Money

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## Feeding and Care of Baby Chicks.

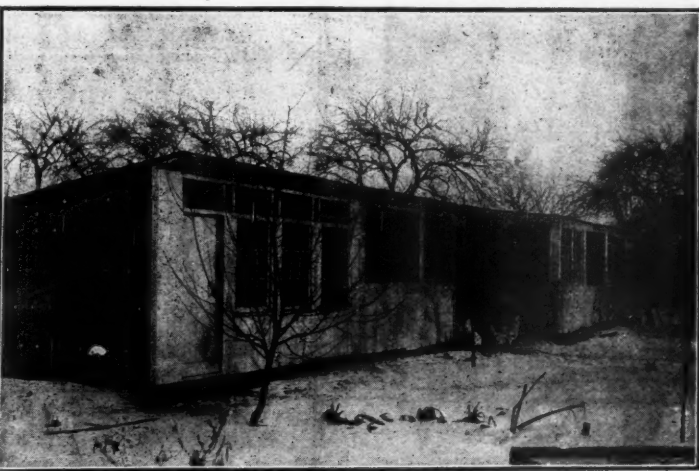
Written for Green's Fruit Grower by Earle William Gage.

Without any doubt whatsoever, the highest laying qualities are determined in the feeding and care which the baby chicks receive. Back of this stage of the chicken life, the greatest factor for a heavy laying strain would be the care of the hens producing the fertile eggs, while the incubation, if by artificial means, is most important. Too many farmers and poultrymen fail to fully appreciate these truthful facts.

The proper care and feeding of the baby chicks is one of the most important problems confronting every man or woman who would make a success of fowls as a business, large or small in caliber. When hatched, chicks are very delicate, even when of hardy strains, and are therefore subjected to the results of improper management and care on the part of the caretaker. The chicks for the first few days will eat every thing and anything coming within their reach. The caretaker must choose the food, teach the little fellows to eat that which is suitable, and after the fifth or

minutes for the chicks to eat each time, and allow them to eat all that they will consume during this period. Be sure that they eat from such dishes as will be impossible for them to wallow in, thus consuming a large percentage of dirt and filth. Sort the weak from the strong, placing them in a separate pen, and see that they are well fed. Clean the dishes after each feeding time. Use only sanitary drinking dishes, which may be procured at any supply house. The kind that hang on side of brooder house are best. Have plenty of fresh water at hand, and empty cans often. The sort that sets on floor are unsuitable. Dirt and dust are sure to get in the water, which will cause disease and sickly stock. Do not allow the chicks to get wet, which will cause roop and a high percentage of deaths. Feed sweet skimmed milk, such as comes from a separator. If this is procurable, use instead of water for the first few days, as it will aid in building up a strong flock at early age.

Cracked grains should not be fed for the first five days. Avoid weed seeds of all kinds. If worms and weed seed are placed



A cheap but serviceable Poultry House.

sixth day, they will have conquered the facts that have been taught them. If we fail in this teaching at the outset, we shall have a strain of poor quality.

The fact is, yet a large number stumble over it. Do not feed the chicks anything for the first twenty-four hours. I have found in my experience that the first thirty-six hours is nearer the mark. It is quite natural that they should be hungry for the first few hours, but this is provided for by Mother Nature, as just previous to peeping through the shell they consume the yolk of the egg, this portion being consumed by the digestive tract, which means sufficient food for thirty-six hours. This food must be properly digested previous to more being consumed, else death will surely follow, or, on the other hand, a sickly or diseased flock. Let the chick sleep and rest for the first two days. It has been a strain on his system to pass through incubation. You may determine when they are hungry, as they will pick at one another. There are five don'ts that you must remember if you would succeed. These are: 1. Don't feed until chicks are twenty-four to thirty-six hours of age. 2. Don't over-feed. 3. Don't starve them. 4. Don't neglect them, but give them your unlimited attention. 5. Don't feed grain at first.

The first feed should be one-third hard-boiled eggs, one third stale bread, not musty, and one third rolled oats (or oatmeal). This should be moistened with skimmed milk, (not sour). Do not feed sloppy mixtures. Merely have mixture dry substance, and add a little grit or fine sand, giving the chicks all they will eat at each meal, feeding this each two or three hours. The eggs should be boiled for twenty minutes, thus the yolks will be mealy. Feed five times per day from 7 A. M. to 5 P. M. in late winter or early spring. As the season advances, change hours to from 6 A. M. to 6:30 P. M., feeding six times per day. Allow fifteen to twenty

side by side, the chicks, even at early age, will take the worms. They have the natural instinct for that which is more valuable. Nature has provided the chick, after it has reached the fifth day, with an instinct for that which is best for it. But Nature did not provide the chick with knowledge of what a good meal amounts to. The feeder must decide this for the chick.

At the Chautauqua Lake Poultry Farm it is my habit to bed the brooder-house floors for baby chicks with eight inches of alfalfa finely ground, which may be purchased at any supply house. In this I bed a peck of chick grain, which is finely ground. There is enough feed in this bedding to properly feed the little fellows for a term of two weeks at least, although I make it my business to closely watch the bedding to note when supply is low. As I clean out the bedding at end of the 15th day, I then place another peck in the new supply. This type of feeding is ideal to my mind. The keeper is not obliged to feed the chicks every two hours, and they are never over-fed or under-fed. They can earn their living when they feel hungry and will save the owner considerable in feed bills for the year. Then, too, better stock will result, which with me, has been the principal object in the use of this system. After trying this way and the other, of feeding each two hours, I shall always from now on use the deep-litter system.

Green foods should never be fed until the sixth or seventh day. Short cut clover, lettuce or rape is best. Cabbage is most too loosening. With the use of fine cut alfalfa, the chicks in three weeks will consume about twenty-five pounds, and it will do them great good. They will eat this, small particles, from the very first. I never keep more than 75 chicks in same lot at first, and after first week, would recommend even with large hovers, that fifty would be better and thirty-five best. Disease cannot get a hold on so large a

number, if disease does get a hold, and they will have the advantage of more even ration in smaller flocks. The greater investment in houses will be greatly repaid by the diminished loss in stock at early age. Only after October first, when fowls are placed in houses for winter, is a large flock to be desired. It is not then desirable when poor houses are in evidence.

The Cornell system of rations has been a great success with me. It consists of 8 lbs. rolled oats; 8 lbs. bread crumbs or cracker waste; 2 lbs. sifted beef scrap (best grade), and 1 lb. bone meal (best grade). This to be fed moistened with sweet skimmed milk five times per day. Fed mealy, not too wet. Trays should be used, containing as well, finely ground clover, not cut clover, and regulation chick grit as well as charcoal. This to be fed from first to fifth day.

From five days to two weeks a ration of 3 lbs. wheat (cracked); 2 lbs. cracked corn (very fine), and 1 lb. pinhead oatmeal. Feed this in litter twice per day. With this feed, moistened with skim milk, 3 lbs. wheat bran; 3 lbs. corn meal; 3 lbs. wheat middlings, (which will be had with the wheat if ground in home grinder as result of the wheat bran); 3 lbs. beef scrap (best grade), and 1 lb. bone meal. This same ration should be before the chicks in hoppers all the time from fifth day on till the fourth week, when we give a ration of 3 lbs. wheat (whole); 2 lbs. cracked corn, and 1 lb. hulled oats, till the sixth week, when chicks are on open range. Have dry mash always available, and feed moist mash of this twice per day. From six weeks to maturity we feed 3 lbs. wheat and 3 lbs. of cracked corn, one meal of the moistened mash if early development is desired.

Provide fine grit, charcoal, shell, and bone from the start. Give grass range or plenty of green food. Have fresh, clean water always available. Feed only sweet, wholesome foods, "good enough for humans." Never allow damp or soiled litter, as this breeds germs and disease. Disinfect brooder coops with one-third of water, kerosene oil, and crude carbolic, using power pump-spray. Allow this to dry, then replace litter with clean and fresh alfalfa of the cut variety after second week. Never feed beef scrap that is heavily proportioned with pork substance as this damages the stock. Cheap beef scraps contain this. Buy the best, sold by houses that make a business of supplying poultrymen, and know and care about their needs. Allow stock to become hungry once each day. This will make them alive and active. Feed moist, mushy mash very sparingly. Always keep dry mash in hoppers before the stock.

Using this sort of a system the farmer and poultryman will have far greater success, make more money, and will really enjoy the business. Those who keep close to other methods will at early age wear wrinkles, and will tell the whole world that "poultry is a lottery, and that a dollar was never made from feathered flocks."

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# February Poultry Pointers.

By Earle William Gage.

Have you ordered that incubator yet? Or those other articles you will need? Be sure to right away, for from now on the incubation should take place for early fall layers. Look the advertisements over carefully. Then drop a card.

Put in these days making hen-brood coops, over-hauling the brooder-houses, and cleaning the hoverers, if not already done. Be sure that the breeding-pens are coming along properly, and keep the lice off the hens that will lay the fertile eggs. Look for mites, too. Don't forget the green food. Sprouted oats is a good one, cabbage, beets and kale are others. Feed a little of all these. Variety in food gives the results.

The majority fall down because they hatch just as many chicks as they desire to use later. Or, because they hatch more than they can care for. Be sane about this. If you have the equipment, you can care for 1,000 little fellows. If you haven't the equipment, 50 would be better.

Give the broody hen a chance. If you have early pullets that have been shelling out an abundance of fall and winter eggs, you ought to have some now that are broody and that will make good sitters. Set them in groups of four and five, even ten. It is just as easy to care for ten as for one. Boxes with water and feed at hand, situated in the hay mow, over the stable, with little light, are good places for these sitters.

The duck hatches should be put to going. The hens are probably showing signs of motherliness already. Make them work.

Gather the eggs frequently during this cold weather to avoid chilling, but do not keep them in a warm place, 40 to 50 degrees is about the right temperature.

Keep the incubators going. They ought to work for the next two or three months. Raise chicks for meat if nothing else, and the neighbors will gladly buy all the extra pullets if you can't use them.

Frosted combs should be first rubbed with snow or cold water until the frost is out. Then anoint with camphorated vaseline and massage thoroughly until parts are normal in appearance.

You will find torn-backed hens at this season. Look for that heavy cock, and remove his long toe-nails and spurs. Keep the injured hen in a pen by herself for a few days. Cleanse her wounds often and place some good ointment on parts.

Keep the nests clean for eggs. Use vinegar to remove dirty spots. Clean nests save a lot of trouble. Dirty eggs become contaminated in two hours.

## Death to Poultry In Salt.

I know of several housekeepers who have thrown food excessively salted into the garbage can which was later emptied into the poultry yard, causing the death of all the poultry on the place. In one instance, a lady had by mistake put salt into a cake instead of sugar. She thought there was no danger in throwing this out to the poultry, but it caused the death of every bird she possessed.

This does not mean a slight portion of salt, such as may occur in breadmaking, would produce serious injury. If salt is thus deadly to poultry, the question may arise may it not be injurious to man when used excessively. Salt eating is largely a habit. Many people eat salt to excess. Just what effect salt eating in excess may have upon the human system is not fully known. It is not impossible it may have something to do with cancerous growths and other dreaded diseases.

## Poultry Winter Housing and Ventilation.

Good winter housing means: (1) That the poultry house should be absolutely free from draughts; (2) admit plenty of sunshine and fresh air; (3) be reasonably dry at all times, including interior and litter; (4) constructed so as to be reasonably warm and to maintain as uniform a temperature as possible. The more uniform the temperature in a house, the better the fowls will do. Guard against having it warm during the day and cold during the night. So many of these glass-front poultry houses provide just such conditions, and for best results, just the opposite should be the case, says Pennsylvania Farmer. During the daytime the fowls can keep warm by scratching and exercising, but at night, if it is cold, they can do nothing better than huddle together and freeze. Remember, that in order to have fowls do well in winter, your off-great aim must be to keep them comfortable. If you succeed in doing this, you have solved the problem of winter housing.

One way of housing poultry properly is to build a common shed, on a dry location, on the south side of some of your larger farm buildings. Do not build it as a lean-to, but as a separate building. Have it just high enough so that one can do the work in it comfortably. Build it to have the three ends, north, west and east, absolutely air-tight, so that there will be no chance for any draughts. The

best way to do this is to cover the frame with a good grade of matched lumber, and this in turn with a good grade of one-ply roofing paper. Exercise great care in putting it on in order to get it well over all joints, especially where the fowls roost. Where the fowls are to roost, ceil it on the inside, far enough down the back and up the roof to get extra protection for them at night and help confine the animal heat. This inside ceiling is left open on each end, on the side just below the dropping board and up the roof far enough to get it away from the heads of the birds. This gives a live air-space in the roosting closet, which we find aids in keeping the roosting room dry. The roosting closet should be absolutely dry.

It is advisable to have a small ventilating door in the rear of the house near the roof for additional ventilation in summer, but in winter this should be closed tight.

In ventilating our house in the winter time, we use the muslin curtains chiefly, excepting on rather warm days, when we open the doors and windows for a few hours to air the house thoroughly. As stated before, however, most of the ventilating is done with the curtains, which are operated with the sun. We open them with the sunrise in the morning and close them with sunset in the evening. In case of a strong wind from the south, accompanied by rain or snow, keep curtains closed during the day, to keep the litter dry. If your hen house is damp, increase the ventilation, as paying hens and dampness never go together.—F. W. Kazmeier, Cornell University.

## The Lure of Poultry Keeping.

Chicken raising offers as many inducements to women as it does to men.

No matter what your trade, profession or business is, the poultry industry offers a delightful hobby or chance.

The poultry industry has increased more rapidly than any other branch of agriculture. The annual valuation of poultry and eggs produced in the United States is reputed to be at least one billion dollars. The gradual increase in our population, and decrease in the beef supply will guarantee an unlimited demand for poultry products for years to come and at lucrative prices.

The care of fowls and chickens is a healthful outdoor occupation. It gives one a chance to get back to the land and to find profit and enjoyment therefrom. It offers a variety of interesting features not usually found in ordinary farming. There is always something good to think about and interesting every day of the year. Many branches of poultry work are such that they may be engaged in by those who are not strong and robust and who often regain their health by so doing. The best inducement to enter poultry keeping as a business is that it may be undertaken in a small way with a very limited capital and gradually enlarged until it provides a good livelihood. We shall not attempt to deny that there are many failures, but always maintain that these ill-successes are on account of negligence or lack of knowledge on the part of the poultry keepers rather than any fault of the industry.—Bulletin, R. I. Poultry School.

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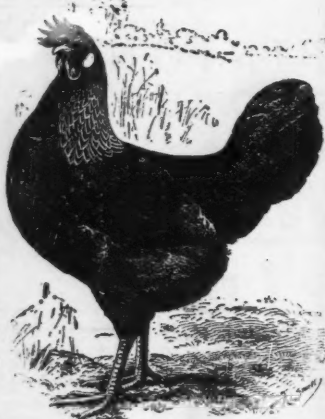
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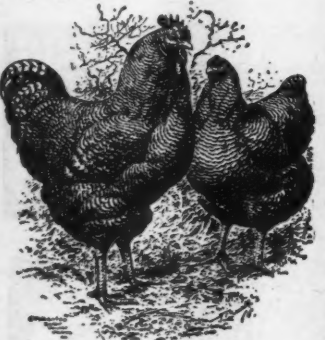
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This breed is as solid as its name, and is often called the "Farmer's Friend," the "All Round Fowl," the "Old Reliable." It is the bird for business, and deemed by many the best fowl for farm and home raising. It is not only a good layer, but is quick to develop for the early market. As a far-sighted farmer once said to us, "When you kill one you've got something." Price of Barred Plymouth Rocks: Cockerels \$3.00, \$5.00, \$10.00 and \$25.00; Pullets, \$2.00, \$2.50 and \$5.00; Trios, \$6.00, \$8.00 and \$10.00.

We ship no cull birds. The lowest priced birds offered are standard bred, practically as good for breeding purposes as the higher priced birds. The \$5, \$10 and \$25 birds offered are the pick from the flock containing the largest percentage of standard birds and therefore commanding a higher price since it makes them eligible for show purposes.

## PRICE OF EGGS FOR HATCHING FOR ALL BREEDS:

From good breeding pens, \$2.00 per 15; from our best breeding pens, \$3.00 per 15. While we do not guarantee the fertility of our eggs we are willing to replace all settings from which the purchasers receive less than six chicks, at half the price paid.

Green's Nursery Company  
Desk P, Rochester, N. Y.

## The Price of Eggs.

By Geo. H. Lee.

The price of eggs is exciting much comment at the present time and many ridiculous cartoons are appearing in the daily papers. At the same time there is general condemnation of cold storage, the one thing that has heretofore equalized egg prices between summer and winter.

It is within my recollection, just before the general adoption of cold storage for the preservation of food products, that, during the spring and early summer, eggs would be worth 8 to 10 cents per dozen. Then, in the midst of an ordinarily severe winter, the price would go up to 50 or 75 cents per dozen.

After cold storage had been proven effective for preserving eggs, the price soon became equalized, ranging between 15 and 25 cents per dozen the year round, with feed about half the cost of the present time.

So long as it is possible for any family, in town or country, to keep one or two dozen chickens in the back-yard, with little or no expense for feed or care, it is no more possible for any person, corporation, or combination to corner the egg supply than it would be to corner the bread supply so long as there is flour for sale in the market and housewives willing and competent to turn it into bread.

With the present high prices for feed, there is little or no profit in eggs at 30 cents per dozen except in case of the back-

yard flock, fed principally from table and kitchen scraps. Here it is most profitable and it is surprising that more people do not put in a few hens instead of consuming an ancient product and kicking about the price.

Eggs will continue to be eggs, and will steadily advance in price just so long as people continue to do two things. First, sell their eggs during spring and early summer, because of good prices, instead of hatching and raising more chickens. Second, avoid the small expense and labor incident to the keeping of a small home flock.

There is no complaint from those who keep chickens about the high price of eggs. Such complaint comes exclusively from those who do not raise chickens; who don't want to be bothered with them; who want some one else to do it for them at a price less than cost of feed.

For several years there has been an increasing demand for eggs and a decreasing supply—the latter due to high prices for grain and other feed, unsuitable breeding and hatching seasons, and good egg prices that tempted the selling of eggs for culinary purposes rather than their use in incubation.

What is a good, fresh egg from well fed, healthy stock really worth? If we have been accustomed to paying ten cents a dozen, then we will consider twenty cents a dozen as extraordinary and inexcusable. If, however, we had been used to paying one dollar a dozen, then we would consider sixty cents a dozen a downright bargain.

Personally, I would much prefer a couple of good, fresh eggs at five cents

apiece rather than ten cents worth of beefsteak. But, then, preferences don't count. We have to pay a premium if we want goods of any kind that are scarce, and just so long as the great majority of home owners prefer to consume rather than produce, then just so long will eggs maintain or advance in price.

## Chick Feeding.

The first thirty-six hours after emerging from the shell, the little poult is nourished by the unabsorbed remnant of the yolk of the egg still within its body. After it begins to respond to the appeal of hunger, its first need is for grit with which to grind the food it may now swallow; hence fine, sharp sand or other grit should be placed within reach. Fine charcoal is also beneficial but not necessary.

As to the food itself, it is well to remember that very little fat or energy is to be produced, but a large proportion of muscle, bone and feathers; hence the food should consist of generous allowances of pinhead oat meal, cracked wheat, meat scraps, bone meal, pea, beans, etc., ground small. To supply heat and energy feed coarse corn grits, broken rice, kafir, milo maize.

Value of Poultry Manure.—Poultry manure is one of the most valuable by-products of the farm, yet many farmers give it little or no attention. The dropping boards in the poultry houses should be

cleaned at least twice a week, and the manure thoroughly mixed with either land plaster or sifted coal ashes; then store it in barrels in a perfectly dry place. By so doing, the moisture is retained and the ammonia cannot leach out. Manure kept in this way will analyze nitrogen, 13.4 per cent.; equivalent to ammonia, 16.3 per cent.; equivalent to calcium phosphate, 6.7 per cent. It is thus evident that hen manure contains a high proportion of nitrogenous matter, but a smaller quantity of phosphates than guano, which analyzes 20 per cent. phosphate and 6 to 8 per cent. ammonia. I have known it to be used in making a complete fertilizer for corn, that grew almost fabulous crops.—D. T. Hendrickson.

## Poultry Notes.

The chicks carry enough nourishment in their bodies that is absorbed from the yolk of the egg to last them for 24 hours. Scaly legs are caused by parasites. Use coal oil and lard.

Over-fed hens never lay eggs. Do not put eggs in the incubator if you think they have been chilled. If they have been, they never will hatch.

The more the hen exercises the more eggs she will lay. So keep her scratching. Never feed little chicks wet, sloppy food. It is bad enough for mature stock. Pulverized charcoal should be given in the feed three or four times a week. It promotes digestion and makes for fine flesh flavor.

Many dealers object to eggs with pale yolks. When you find yours are getting that way, put a little more corn in the ration.

Trying to make a thousand fowls thrive on a lot large enough for only 500 has been the ruin of many a poultry business.

Don't wait until you are ready to set the incubator to find out that there is something wrong with it and that it needs repairs. Better look it over today and see that all that needs to be done is to fill the lamp, put in the eggs and start it off.

Little chicks should be fed little, but the feed should be given often. There is always a great danger of overfeeding. It is an easier matter to feed too much ground feed, as small grains are digested more slowly. Therefore, if grain is fed exclusively, the chicks will make slower growth. If they eat much soft feed, they will grow more rapidly, but are more apt to have digestive troubles.

Before starting the incubator, cleanse and disinfect it thoroughly. Scrub it out with hot water and soap; clean and light the lamp, and when the incubator is nearly dry, spray with some good disinfectant. After spraying, close the incubator and heat it up. Keep it closed and hot for a day, then run it a couple of days with the doors open so it will dry, and it is ready for use. Chicks hatched in moldy or foul incubators are nearly sure to have disease, so it will pay to take a great deal of pains to make the incubator clean and pure.

Allow about one acre of land for 100 hens, that is to say, a 10-acre farm should contain sufficient land for keeping 100 hens, the assumption being that about half of this would be used for rearing the young stock. This would allow 200 hens per acre on one-half of the farm.

## MAINE BULLETIN No. 216.

## The Value of Hen Manure.

According to experiments carried on at the Maine Station, the night droppings average 30 pounds per hen per year.

The poultryman or farmer who properly cares for the droppings can add a neat further profit to his business. For example, the droppings from 1,000 birds, if preserved without needless loss, will be worth at least \$300.

Poultry manure contains more nitrogen than other farm manure, because in birds the excretion of the kidneys is voided in solid form (uric acid), with the undigested portions of the food. This form of nitrogen is easily available to plants. Unfortunately, however, it is not stable. Putrification processes easily change it to ammonia compounds, and unless special care is taken of the droppings one-third to one-half of the nitrogen passes off as ammonia gas.

The mechanical condition of poultry manure is poor. As Storer says: "It is apt to be sticky when fresh and lumpy when dry." On this account, if used untreated, it can only be successfully applied to the land by hand, as it does not work well in drills or spreaders. Hen manure used alone is very wasteful of nitrogen as it carries this element in too large a proportion to its phosphorus and potassium.

## EGGS EGGS EGGS

From our heavy laying Exhibition Single Comb Brown Leghorns and Barred Plymouth Rocks.

On Leghorns, 1913, we won as follows: Flower City Poultry and Pigeon Association Show, January, 1913: 1-3-4 Cockerel; 1-2 Pen.

Rochester Exposition Show, September, 1913: 1 Cock; 1-2 Hen; 1-2 Pullet; 2-3 Cockerel; 1st Pen.

Flower City Poultry and Pigeon Association Show, December, 1913: 2 Cock; 2-3-4-5 Hen; 1st Pen.

Our Barred Plymouth Rocks are from the famous Haldie Nicholson strain. Nicholson birds have taken first prizes at the New York and Boston shows for several years.

All of these fine birds are included in our breeding pens, from which you can purchase eggs at \$2.00 and \$3.00 per setting of 15. Owing to the fact that our entire Poultry Plant was moved last year to another farm, we will not have as many pens as usual this year, and in order to secure eggs on exact dates desired you should send your orders to us at an early date.

GREEN'S NURSERY COMPANY  
Desk P ROCHESTER, N. Y.

TOM Barron White Leghorns Direct, also Young and Wyck off strains. Eggs \$1 per 15; \$5 per 100. Catalog of matings and poultry supplies free. The Elmore Farm, Bridgeport, Conn.

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Latest Book "Profitable Poultry" pages practical facts, 180 beautiful pictures. Tells how to breed, hatch, feed and market by latest improved methods. All about Runner ducks and 28 other pure-bred varieties. This 50 cent book and lowest price list of best fowls, eggs, incubators, supplies, etc., only 5 cents. BERRY'S POULTRY FARM, Box 96, Clarinda, Iowa.



# An Old Work-Horse.

I think you are no kin of those, indeed, High-born to beauty and to splendid speed; Nor to those placed where the tide of battle sets, Arching and proud among the bayonets.

The gentle forehead and the humble crest, The mighty shoulders and the fair, broad breast, The great limbs without grace or symmetry, Fitted you for a different destiny.

What have you gained from all the years that went, Monotonous and irksome, while you spent Your heavy, solid strength unsparringly In the work the end whereof you could not see?

What more than a hard living have you won With all your labor underneath the sun? Have you found love and kindness to repay Your sturdy, faithful service day by day?

I like to think that you were sure to find Those other toilers comrades and kind; You have not lacked a hand whose touch was dear To your old heart, a step you loved to hear.

And now the utmost that you know of bliss Seems for a little while to stand like this, At ease and drowsy—what could you prefer? Hail and farewell to you, old laborer!

—Youth's Companion.

## Increasing the Value of an Orchard One Hundred Per Cent. by Spraying.

Written for Green's Fruit Grower by John E. Taylor.

So many orchardists have demonstrated the benefits to be derived in the matter of increased production of better fruit, even by simply spraying the trees once in a season, and likewise the very decided benefits that can be expected to follow cultivation and fertilization, that these would seem to be so well established principles of orchard management that nothing further need to be said, and yet we know that there are a good many orchards in the state which are losing good fruit and money for their owners because these things are not being done for them.

There is a man in Maine with a small orchard of fifteen trees which has not been given any attention at all in a good many years. The ground has not been plowed, according to the testimony of neighbors, in more than nineteen years. The trees are of good size and ought to be bearing big crops, but for several years the fruit has not been worth gathering on account of worms and lack of quality, and, in fact, most of it has fallen off the trees before it was fit to pick and has gone to waste. He says, "We took charge of the place too late to give the trees any pruning, and too late for a dormant spray. The ground was plowed up and harrowed pretty late, and it was not disked before it was plowed because we had to depend upon a neighbor whom we could hire to plow and harrow, and we could not get him to put his disk on the sod before it was plowed. Neither he nor his hired man, who had "been doing that kind of work for more than forty years," had ever heard of such a thing as trying to cut up old sod with a wheel harrow before plowing it.

I succeeded in getting the promise of a thorough job of harrowing with the disks after the plowing, but it was done in my absence and most certainly was not thorough. It was just a skim job, as I have discovered since by the great amount of extra work in planting a crop of potatoes and in cultivating them. Instead of being cut up and pulverized by the disk, the turned under sods were not even touched, as my back and arms will testify after spading up a small piece of the ground following early peas. I have an idea that the poor preparation of the ground is going to cost me many dollars' worth of potatoes, although the tilling will be a great benefit to the apple crop, and it is the apples about which I started to tell you. The preparation of the ground for potatoes is another story.

After the plowing and the bluff at harrowing, twelve pounds of Sagadahoc Special Apple Fertilizer were applied to each tree, beginning six feet from the trunk and spread out as far as the limbs extended, or a little farther. This was in addition to a liberal application of 5-8-7 for the potatoes. The only pruning which the orchard received was the cutting out of a few dead limbs and two or three outgrowing limbs which were too near the ground or otherwise in the way. A large number of tent caterpillar nests and browntail nests were removed, but it was not possible to get rid of the worms until the trees were sprayed. As in most orchards, the cold spring weather at the time the blossoms fell caused a much lighter set than the amount of bloom seemed to indicate, but the apples that did set are growing well, already getting a good color, and are hanging well on the trees. Very few of them have dropped since the blossoms fell. And they do not show insect injury as they did last year. The present prospects are for a moderate amount of fruit, but it looks as though the fruit would be eatable. Last year there was practically none of it that was fit to use.

## Why the Mice Flourish.

Question was asked and answered a short time ago concerning an orchard that was badly damaged by mice; the questioner asking for protection against these

rodents, says The Gleaner. The writer recently visited said orchard and the first thing that greeted our eyes was a large owl, dead, and nailed to the barn door; the owner stating "that he had just shot the owl and hung him up so that passersby might see it." Through pity for this self-supposed hero we withhold his name. We examined the poor bird and while doing so we remarked to the farmer that he had "nailed to the cross" one of the greatest benefactors in the way of protection against mice. This he seemed in doubt about, so we proceeded to dissect his victim and there before his eyes lay eight field mice and particles of insects of various kinds that had dropped to the stomach of the owl, when we remarked, "There hangs your friend and fellow worker, and yet you thoughtlessly killed him." When will men learn these common-sense lessons? The robin works faithfully from early spring till late autumn, yet, because he eats a few cherries he must die, regardless of the untold thousands of insects that he destroys; the despised crow rids the fields, barn yards and woods of all forms of carrion, yet he is the chosen target for the gun of the ignorant, simply because he gets a hill of corn now and then; likewise the hawk, but because one of his species catches an occasional chicken yet the whole family of hawks must suffer the death penalty regardless of the vast number of mice and young rabbits that they may and do devour during a season. When will men learn these lessons? When will they stop knocking the spokes out of the balance wheels of nature? Isn't it a direct slap in the face of the great Creator to thus ruthlessly blot out the agencies he sends to aid us in our battles?

## Spraying for Peach Leaf Curl.

There is no mystery whatever about the cause of "the curl" in peach leaves early in the growing season or any difficulty in controlling it if the spraying is done properly. The lime-sulphur mixtures will kill the spores if properly applied any time before the buds begin to open. The germs of the disease are on twigs and one good spraying will do the work. It is too late to do it when the signs of the trouble are showing. It is a disease that needs attention as a preventive measure—not as a cure after it has begun. The same dose will kill the San Jose scale if there is any on the trees, and other insect and fungus enemies besides. Cover every particle of the twigs and branches and get the mixture into all the crevices of the bark.

## Sum Sayings.

Written for Green's Fruit Grower by Unkel Dudley.

A rose will be er sweet rose still  
"Tho bloomin in er dessert vare;  
An er weed will be nuthin but er weed  
"Tho growin in er palace fair.  
A pretty fase ma please, but er sweet  
tempur iz far betur.  
Injurius things ar oftun dun bi pepul  
who don't stop tu think.  
Selfshnes an greed ar the wust weeds  
knone, an nevur shud be alowd in the  
garden ov yure heart.  
The futur allus looks butiful when  
God's spirit lights up the way.  
Thar ar many preshus jewels tu be  
found in the paths ov humility.  
Whoever sinserly tries tu furegt the  
evil an remembur unly the good iz truly  
wize.

The mos butiful thing er mortal ma  
poges iz er white soul.  
It izunt good maners nor policy tu tawk  
erbout yure naburs faults an fallins.  
It iz er good deel betur tu put the  
Golden Rule in praktis than tu tawk  
erbout it.

If yu wud hev the friendship ov the  
siner's Friend, be true tu Him; this will  
aply also tu yure earthly friends.  
Man made minuters an lawyurs shud  
be respekted. The former bekaws thay ar  
suposed tu tel the truth, and the lattur  
bekaws thay ar not.  
Loafin may be kinder nice an eazy tu do,  
but it wunt inkrease yure bank akount.

## The Loafer.

The loafer loaf'd around the store,  
An at the tavurn too;  
At the wurkhous he iz stayin now,  
With plenty ov wurk tu do.

"What part of the fowl will yez have?"  
"A leg, if you please," was the answer.  
"An' what part will yez have, Would  
yez like some of the white?" Pat in-  
quired of Mrs. O'Hooligan.  
"An' a leg will do me," she answered.  
As each answered, the part of the fowl  
she desired was given her.  
"What part will yez have, Moike  
Walsh?" Pat blandly inquired of his  
neighbor.  
"Oi belave Oi will take a leg too," said  
Mike, in his most modest way, wishing  
to follow in the footsteps of the rest of  
the company.  
"Begorra," said Pat to Mickey, "what  
does yez think Oi'm carving—a spider?"

## All Crops Thrive In Virginia

No excessive cold in winter or long, dry spell in summer. Average rainfall 45 inches. 4 inches monthly in 1913. Average July temperature 76, December 36. Corn, wheat, oats and other cereals, all legumes, tobacco, alfalfa, large and small fruit and garden truck thrive equally well. Near to the big markets with quick transportation facilities. Write today for list of desirable farms which can be bought for \$10 an acre and up on easy payments. Maps, booklets, home-schemers' excursion rates, etc., on request.

F. H. LaBaume, Agr. & Ind. Agent, Norfolk & Western Railway, Room 227, R. & W. Railway Building, ROANOKE, VA.



**RHODES DOUBLE CUT PRUNING SHEAR**

Pat'd June 2, 1903.

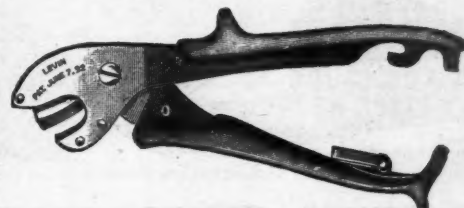
**RHODES MFG. CO.,**  
532 S. DIVISION AVE., GRAND RAPIDS, MICH.

The only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

## PRUNING SHEARS GIVEN AWAY

By GREEN'S NURSERY CO.

You will need this Pruner to prune or trim your trees, plants or vines. The Levin Pruner is acknowledged the best. It is made of best steel, is strong and durable. Cuts one-half inch dry branch. With it you can do twice the work you can with an ordinary pruning knife, and you can do the work with greater ease.



### Conditions of Green's Offer to Give Away These Pruning Shears

If your order amounts to \$7.00 or more, and if it reaches our office on or before March 15th, 1914, you will receive one Levin Tree Pruner, free of charge, provided you ask for it at the time you order the trees, etc. These pruning shears will be sent carefully protected in the package with your trees.

## GREEN'S NURSERY COMPANY

91 Wall St. ROCHESTER, N. Y.

Cut out this coupon and send it with your order, then you will be sure to get the Levin Pruner gift.

GREEN'S NURSERY CO.,

Rochester, N. Y.:

I enclose herewith my order which amounts to \$7.00 or more, at catalog price, and will ask you to send with my order your gift of the Levin Pruner. I understand no premium will be allowed on order received after March 15th, 1914. I may add my neighbor's order to my own to make it amount to \$7.00, all to go in one package. Only one premium may be applied on any one order.

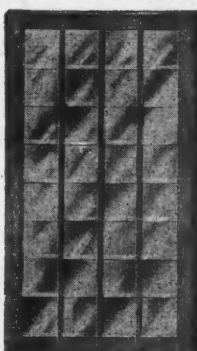
Name

City

State

## HOT BED SASH

10,000  
Ready to Ship Now.  
**79c Each**  
OPEN  
in lots of 100 or more.  
Size, 3x6 feet.  
1 1/2 inches thick.



Our factory made this stupendous quantity during the dull summer months, thereby enabling us to offer them to you at a SAVING of from 1-3 to 1-2. The sash are first-class in every respect—material construction and workmanship. You will surely miss the BIGGEST BARGAIN of your life if you don't order right now.

There are NO CROP FAILURES for the man who uses Hot Bed Sash. It means BIG MONEY and the work can be done during the months of the year when other work is not so pressing. The people are waking up to this fact more and more each year. Fortunes are being made out of Hot Beds, and the supply is still far short of the demand.

Our Main Talking Point in Addition to Superior Quality of Wood, Strength and Weather-Defying Character of Our Hot Bed Sash, is a Point That Every Wise Buyer Recognizes. That is Our

## LOW PRICES

These Prices are Free on Board Cars Chicago. Carefully Packed. Guarantee SAFE DELIVERY.

OUR HOT BED SASH ARE MANUFACTURED IN STANDARD SIZE ONLY.

	3 Feet X 6 Feet—1 1/2 inch Thick.	(Open)	(Glazed)
No. 10-GF-913.	Less than one dozen.	Price each, . . . . .	\$0.95 . . . . . \$1.86
No. 10-GF-914.	Dozen lots.	" . . . . .	.89 . . . . . 1.78
No. 10-GF-915.	Lots of 50 to 100	" . . . . .	.81 . . . . . 1.60
No. 10-GF-916.	Lots of 100 or more.	" . . . . .	.79 . . . . . 1.58

For our Hot Bed Sash, woodwork coated with asphaltum paint, add .10c. Makes them last twice as long as any other hotbed sash on the market.

## 15 Points of Superiority

1. Four (4) rows of glass.
2. Extra strong bars.
3. Extra strong mortised and tenoned.
4. Standard size glass (costs less to replace).
5. Glass set by hand.
6. Linseed oil putty.
7. Large triangular zinc points.
8. Extra size tacks to hold glass in place.
9. Extra deep rabbet.
10. Wood—Clear, well seasoned, close-grain Soft Oregon Fir.
11. Primed.
12. Heavy wire brads.
13. Largest number of strength-giving qualities.
14. No useless shadow casting bracing devices.
15. Quick shipment.

## OUR GUARANTEE

We guarantee that our Hot bed Sash will be delivered to you exactly as described and represented in this circular in every detail, and to anyone who is not satisfied with his purchase we will refund the purchase price and pay freight charges both ways.

**GLASS! No. 10-GF-917. 7x9 Inches \$1.98**  
Hot Bed Glass, box-114 lights.

Inside Bar.	End Bar.
1 1/2 x 2 1/2 inches. Clear Fir.	1 1/2 x 2 1/2 inches. Clear Fir.
No. 10-GF-918.	No. 10-GF-919.
Per lineal foot . . . . . 2 1/2c	Per lineal foot . . . . . 2 1/2c

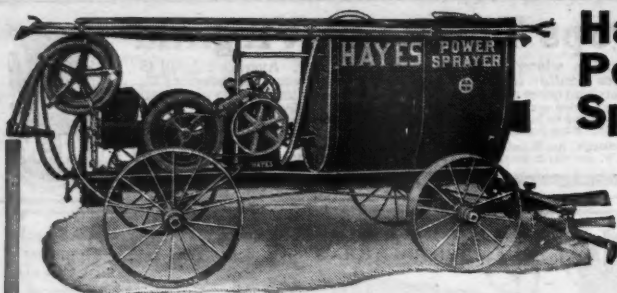
## Are You Going to Build or Improve?

Send for our FREE BOOK OF PLANS GF-64—100 Modern Homes and Barns—Lowest prices—ABSOLUTE GUARANTEE—NO MONEY DOWN. 15 to 20 million feet of lumber in stock at Chicago, ready for immediate shipment.

**100 Lbs. of Galvanized Wire for \$1.13**  
During this sale we are offering "Wire Shorts" usable for many purposes by the Gardner or Florist. The above price is for No. 9 Gauge. No. 10, \$1.40. No. 11, \$1.50. No. 12, \$1.60. No. 14, \$1.70. Other sizes just as low.

**HARRIS BROTHERS COMPANY**  
35th and Iron Sts., Dept. GF-3 Chicago  
**THE GREAT PRICE WRECKERS**  
Owners of Chicago House Wrecking Co.  
(You must order at once if you want to take advantage of these low quotations.)





## Hayes Power Sprayer

300 Pounds  
Pressure  
Guaranteed

**H**IGH PRESSURE spraying produces a better quality and larger quantity of salable fruit. The HAYES is guaranteed to maintain 300 lbs. pressure. It thoroughly covers every particle of foliage with a penetrating fog-like mist, insures results and saves solution.

HAYES large capacity, high pressure triplex pump, special design engine and improved agitator are built for high pressure work. Strong, steel frame, cross braced and hot riveted. All steel, non-tip-over, cross reach orchard truck that turns in 14 ft. Cannot strike trees in turning. Large capacity, light weight, light draft. The HAYES is sure, reliable and easy in operation and guaranteed in efficiency.

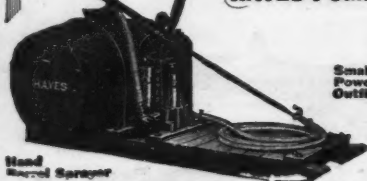
25 Styles  
For Small or  
Large Orchards

We manufacture 25 styles of large and small Hand and Power Sprayers for orchards, field crops, shade trees, hops, poultry, painting, home and garden use. Complete outfits or separate pumps, hose, nozzles, fittings, bamboo rod, etc.

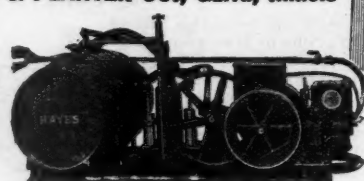
**WRITE!**

Send postal for FREE book #7 on High Pressure Spraying and complete catalog of HAYES Sprayers.

**HAYES PUMP & PLANTER CO., Galva, Illinois**



Hand Sprayer



Small Power Sprayer

When you write advertisers Please mention Green's Fruit Grower.

## A Large Profit Yielding Apple Region

**I**N Virginia, North Carolina, Georgia and Tennessee, thousands of acres of unexcelled apple lands, capable of returning enormous profits, can now be purchased at extremely low prices. These mountain cove lands of disintegrated rock, mineral and decayed plant formation (the greatest requisites for the production of the finest fruit) can be purchased

**From \$15 An Acre Up**

The large assortment of varieties, extremely low cost for land, the especially favored climate, the abundant rainfall, ample sunshine, excellent drainage and the fact that 6 to 12 cents per box puts Southeastern fruit on the New York City market, is convincing evidence that this section excels all others as an apple and general fruit growing country. Virginia alone in 1912 produced over 1,200,000 barrels of apples.

**OBTAIN FURTHER PARTICULARS**  
Lists of fruit lands for sale, our magazine, the "Southern Field", or booklets on the States of Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee or Kentucky sent free on request.

**M. V. RICHARDS, Land and Industrial Agent**  
Room 44 Southern Railway Washington, D. C.



## WHAT DO YOU KNOW ABOUT HARRISONS' NURSERIES?



These Nurseries are located in Maryland, on "The Eastern Shore," between Chesapeake Bay and the Atlantic, and only seven miles from the ocean.

For the production of young fruit trees the climate is greatly superior to that of any other section of America. It gives them greater size and vigor, and makes them absolutely hardy, at one and the same time.

The soil is of a type that puts wonderful root systems on young trees, while making the trunks grow thick, straight and smooth.

Every tree we sell is grown here at Berlin, and all our trees are budded from bearing orchards.

The methods used are the most modern and skillful known. More practical orchard men are employed than by any other nursery in America. Harrison's Nurseries are the largest nurseries in the world. The firm owns and operates orchards of apples, peaches and pears, which contain more than three hundred thousand trees.

**START YOUR APPLE ORCHARD WITH HARRISON TREES.** This year our apple trees are particularly fine. You ought to see our blocks of Baldwin, Stark, Stayman, Gano and Ben Davis. These are the sorts adapted for baking in restaurants, hotels and homes—the use that will demand so many apples in the future. There are "styles" in the tastes of apple consumers, just as in clothes. Grow the varieties that meet the future demands, and that at the same time bear regularly and heavily.

Harrison trees are the trees for New England, New York, Michigan, Missouri and anywhere between, and the varieties best adapted for the varying conditions are described in our book.

### The Harrison 1914 Catalogue Describes the Valuable Varieties Truthfully

It tells how we prevented having to say goodbye last year to a crop of peaches worth \$35,000.00. Sent free on request.

"How to Grow and Market Fruit" the orchardist's guide book is sent post-paid for 50 cents which is rebated on first \$5 order for trees or plants. The home planting book is sent free on request. Write for the 1914 Catalogue today, and tell us about your aims and plans.

## HARRISONS' NURSERIES

BOX 497

BERLIN MD.

When you write advertisers Please mention Green's Fruit Grower.

### Spraying Fruit Trees.

Upon many farms are mature orchards which have been neglected for years, and have produced no income further than an occasional crop of fruit of uncertain quality and very little market value, says E. A. Clark in The Practical Farmer. By the application of up-to-date methods, especially spraying, the orchard question could be changed to a source of pleasure, pride and profit to the owner. Let us illustrate it this way: Take the thumb and fingers of your hand. Your first finger we will call the trimmer, the second finger the cultivator, the third finger the fertilizer, the fourth the thinner, and your thumb the sprayer. One finger alone is not of much value. Two are not much better, nor three nor four. And whenever you use one or all of your fingers you use your thumb, whether it is to pick up a pin or a crowbar. So it is with fruit culture, all taken together make a strong combination. Any operation can be more intelligently performed if reasons for doing it are thoroughly understood; otherwise it is an accident if we get it right. Now just what are we attempting to do when we spray? We intend to kill the apple worm, the plum curculio, the pear slug and all other leaf-eating worms, like tent caterpillar, etc., and prevent the scab on apple and pear, and the brown rot on plums, peaches and cherries. That looks like quite a proposition, but is simple if we follow just four rules—First, have good tools to work with; second, use proper materials; third, spray at the right time; fourth, spray thoroughly.

For small operations up to 4 or 5 acres, the tools consist of a good barrel pump, all working parts of which are brass, as iron is rapidly corroded by most spray materials. The style of pump which is attached to side of barrel seems to be more convenient than the one attached to end of barrel, chiefly because handle is at just the right height to pump easily. Two pieces of 2 x 4 about 3 feet long, cut to fit side of barrel and bolted on, will hold the barrel rigid. Attached to pump should be 15 to 25 feet of good rubber hose, and to this a brass or aluminum lined bamboo rod 8 or 10 feet long; and on end of rod a good nozzle. Right here is the business end of your whole outfit. The old style two, three or four cluster nozzles are rapidly giving way to the single style, which I have used with excellent results. The nozzle should be set at an angle of 45 degrees from the rod to assist in throwing the spray into the calyx cups of the apple, and up under the branches of plum or cherry. For larger operations a platform pump with two cylinders give a higher pressure and will supply two lines of hose. This style is more easily cleaned, as the suction hose can be removed from tank to a pail of clean water, and the water run through the pump, and it should be done every night after operations for the day are finished. For still larger operations use a power outfit and 150 or 200-gallon tank. All material put into barrel or tank should be put through a fine brass screen. What are the proper materials for spraying? For all chewing insects, like plum curculio, apple worm, etc., we use a poison, like Paris green or arsenate of lead, the latter being preferred because of its adhesive qualities, and also because it combines well with the lime-sulphur solution and does not burn the foliage. A fungicide like Bordeaux mixture or lime-sulphur solution, is used to prevent the fungous diseases like apple scab, brown rot and peach leaf curl. Notice that I say prevent the above fungous diseases, as these solutions must be applied before these diseases start their growth to be of much value. The lime-sulphur solution is being used more extensively than the Bordeaux mixture, yet there is a difference of opinion as to which is the most successful in controlling apple scab, but nearly all growers unite in saying that the lime-sulphur is best for brown rot and peach leaf curl. If you use Bordeaux mixture, make stock solution of the copper sulphate by suspending a sack of it in a tub or barrel of water, weighing the copper sulphate and measuring the water. Also make stock solution of slaked lime, but do not mix these solutions until ready to put them into the spray tank. For small and medium sized operations, the commercial lime-sulphur solution can be purchased cheaper than made, and will be more uniform in strength. Also make stock solution of arsenate of lead, as by this method, you save much time in loading spray-tank. When is the right time to spray. Always keep this in mind: You have got to get there first, especially when fighting fungous diseases. If the scab gets on the leaf or apple before you get there with your pump, you can't get that scab off. If you have any oyster shell or San Jose scale, use lime-sulphur solution at a strength of about 8 or 10 parts water to one of lime-sulphur. For the apple, spray after the clusters of buds have broken apart, and the pink of petals begins to show. If done before this the stems of buds are stuck together and it is impossible to do a thorough job. My experience goes to show that this is the most important

spraying for the control of apple scab. The next time to spray is just after the petals have dropped and the calyx cups are wide open, thus making it possible to fill the cup with poison. This is to get the apple worm before it does any damage. Let us pause a moment to study this worm and its habits. The parent of an apple worm is the codling moth, an insect about three-quarters of an inch long. This moth lays her eggs on the leaves and bark of the trees, and the eggs hatch in about 11 days into a tiny worm. This is the most important stage of its development, so far as the horticulturist is concerned, for at this stage it is the most easily destroyed. This little worm feeds for a day or two on the leaf upon which it was hatched, and then begins to look for an apple. As it has difficulty entering the side of an apple, it goes to the calyx or blow end, and feeds here for a day or two more. This calyx cup closes after petals drop, and if you filled this cup with a drop of poison, and have a thin coating of it on surrounding leaves, you will get 90 to 95 per cent. of the worms. Watch the trees; not all varieties will be ready to spray at the same time, thus giving you a chance to spray all at the right time. If you give your trees these two sprayings, and do it thoroughly, you will be surprised at the results. Another spraying should be made about two weeks later; and as another brood of the codling moth hatches about August 1st, a fourth spraying should be given then. Pears should have practically the same attention as the apple. Peaches should be sprayed just before buds open for the leaf curl, usually with lime-sulphur solution. Use this later in the season for brown rot, using a weak solution, about 100 to 1. Plums should be sprayed just after the blow, or husk has dropped from the tiny plum, to get the first of the curculio, which is a little beetle about one-fifth of an inch long. Spray again in two weeks, and again when plums are one-half or two-thirds grown, the latter spraying for brown rot.

"Whatever is worth doing at all, is worth doing well," is especially true of spraying. Most failures are due to lack of thorough work. The aim should be to completely cover leaves, branches and fruit with a film of spray mixture. If too much is put on, it will run in droplets and run off. Any portion left unsprayed is open to the attack of the fungous diseases, a worm or a slug. This seems to the beginner a huge task, but with a pump which supplies the material under a good pressure, and a good nozzle, an ordinary sized tree is soon covered with the cloud of mist at your disposal. Most of the troublesome insects and fungous diseases require attention at the same time, so we can combine our insecticides and fungicides, making one spraying do for both. There is no part of farm work that pays larger returns for the time and money invested, or that gives greater satisfaction when you see the results of your labor.

Let me repeat! Success depends largely on the man. You must like your work, and be interested in it, to make a success of any line. You will know that I practice what I preach when I say that my snow apples last year (a year when scab was very bad) graded 75 per cent. strictly fancy, and sold for \$4.50 per barrel, f. o. b. dock, one-half mile from farm. The remaining 25 per cent. went to a lower grade chiefly because of size, rather than other defects. I entered over twenty plates at the county fair and won first premiums on three-fourths of them. I entered six varieties, in bushel lots, at a merchants' prize day exhibit, and won five first premiums from over 100 exhibitors.—Michigan.

### Love Your Work.

What do you think my son's chances are for success in fruit growing, I am asked.

My reply is, your son's success will depend largely upon whether he is in love with fruit growing. If a man loves his work he is likely to succeed. No matter what your work may be, love will find a way. It will cause your son to concentrate his efforts. Concentration is necessary in order to succeed in almost any human enterprise at the present date. Concentration is like the bullet which cleaves the air forcing itself to a great distance with deadly intent whereas non-concentration may be represented by a handful of shot thrown loosely from the gun which immediately scatters and soon falls to the earth without effect.

The man who loves his work does not always drop his tools when the dinner bell rings. He is not often found sitting on the fence idly watching people pass by, nor does he loaf about the village post office or tavern. He finds his greatest pleasure in looking after the needs of those products of the field which he hopes by careful treatment to bring him full reward in the years to come.

Green's Fruit grower is a paper that makes the boys feel like getting a farm of their own to set out some berry and fruit trees on it.—Mrs. Lizzie M. Ross, Clay Center, Kansas.

PREPARED BY  
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## PREPARING FOR SPRING WORK.

## Trees, Shrubs, and Orchard.

Written for Green's Fruit Grower by  
F. H. Sweet, Va.

With the exception of roses, every bit of the pruning ought to be finished by the end of March.

Gather up all the prunings about the place and burn them. Plant diseases and pests are very liable to mature in them.

Apples, pears, or shrubs that are affected with scale should be treated early this month with the lime-sulphur solution, unless they have already been sprayed; or even if one application has already been made, another will be so much the better. The lime-sulphur solution must not be applied after the buds swell. It is not safe much later than the first of March.

If there are any shrubs or herbaceous plants to transplant, the sooner they are moved the better, in order that they may get the full advantage of the growing weather.

If fertilizer was not spread in the orchard last fall, put on as soon as the frost is out of the ground.

Spray the whole place with Bordeaux mixture. Orchard, lawn trees, and garden—everything but the evergreen trees and the hedges will be the better for it. About the middle of the month, put bands of tarred cotton or some good substitute about the tree trunks in order to stop the canker worms.

Treat the grapes with iron sulphate before the buds start in spring.

Beside their use for a cinder path, coal ashes may be employed as a mulch about young fruit trees.

Roses, oleanders, and other shrubs that have been protected for the winter, can

plants into the ground by the first of April, remember to begin to harden them off in the hotbeds by the middle of March, or, perhaps, ten days before setting them out.

Do not uncover the strawberries too early. Toward the end of March will be time enough; wait, in fact, until they begin to grow, then attend to them promptly.

Dig the land only as it is wanted. Land that is made ready and left unused merely raises an extra crop of weeds.

## HOTBED AND FLOWER GARDEN

Unless it is already under way, get the hotbed started by the first of the month. Early celery, such as the white plume or golden self-blanching, ought to be started in the hotbed early in March. Late celery should be started either outdoors or in a frame by the end of the month.

Don't neglect to put the mats and shutters over the hotbed at night all through this month and even into April. Air the hotbed during the daytime.

To give early-flowering asters, zinnias, annual phlox, lobelia, centaurea, single dahlias, cosmos, and any annual a good early start, sow in the hotbed to set out later. The end of the month is time to plant them, since you do not want to rush growth.

In the flower garden sow out a package of early verbenas and petunias by the first of the month.

In buying fertilizers for fruits and flowers, remember that you want the kinds that have a good proportion of phosphoric acid and potash.

Do not make too much haste about uncovering the bulbs. They should be uncovered gradually. If the weather is very mild take off one-half the cover, say



Trade Mark

## Buy "Corona Dry"

One pound of "Corona Dry" will do the work of three pounds of Paste Arsenate and do it better

Imitated but not duplicated

But economy is not everything. Efficiency is more important. What would it mean to you to have a spray mixture of standard strength and be absolutely sure that all of one spraying or of many sprayings was absolutely the same strength? Evaporation, difficulty of perfect mixing, make this impossible with a paste arsenate. You can have a standard efficiency if you use Corona Dry.

Largest and most progressive growers have rendered the verdict

A large practical usage in every section of the country has proved that "Corona Dry" is unequalled in efficiency or as "easy mixing." It does not freeze, dry out or cake; always retains its original strength. A perfect mixture, a perfect standard of unvarying strength, is assured with

# "CORONA DRY"

## Arsenate of Lead

Patented June 10th, 1913

The "Standard" for Convenience, Economy, Efficiency

Quickly and easily mixed. No working up—no straining needed—no sediment. No lumps. No waste. Never clogs spray nozzle. Highest per cent. of actual killing power. Absolutely safe, will not burn. Sold in net-weight packages: 200 lbs., 100 lbs., 50 lbs., 25 lbs., 5 lbs., 1 lb. No shrinkage, seepage, evaporation. Every package contains actual net weight of "Corona Dry" paid for.

Remember, "Corona Dry" means no guesswork, but a standardized spray in which the mixture is always the same strength and efficiency.

Write for Booklet. Ask for Corona "Tree Insurance" Policy. Address

### CORONA CHEMICAL CO.

Dept. A, Milwaukee, Wisconsin

Manufacturers of

Insecticides and Fungicides, Arsenate of Lead, Lime and Sulphur, Bordeaux Mixture, Paris Green, etc.

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Spokane, Wash.—Spokane Seed Co.  
Portland, Ore.—Portland Seed Co.



A Corner of C. A. Green's Grounds.

have their covering removed by the end of the month.

Wood ashes are good for grapes, currants, pears, peaches, and other fruits. Put them on about the last of March.

## THE LAWNS AND DRIVES.

The end of March is about the time to take up the plank walks. Clean off the leaves and the other litter about the place and on the lawns.

Have the lawns raked, and if there are any bare spots or places where the grass is thin, throw in a little seed.

Be sure to have the lawns rolled with a very heavy roller. A single rolling, when the ground is still moist, will more effectually flatten down the hummocks than the frost has raised during the winter than five times as much work after the soil is dry.

As soon as the frost is out of the ground, hoe up the drives. Pull the gravel into the center of the driveways and rake and roll them. They will be the better for it all summer.

Cut the edges of the drives and walks. Repair the damage done by wheels that have encroached on the lawns during the winter.

If the lawn was not enriched in the fall, be sure to fertilize it the middle or last of this month. Wood ashes, bone meal, nitrate of soda, and pulverized sheep manure—especially the first two—are good on the lawn.

## THE VEGETABLE GARDEN.

As soon as the frost is out and the soil has become dry enough to work, get in sweet peas, garden peas (round-seeded varieties), onions, spinach, radishes and parsley. Take the very earliest chance that offers to plant them, even if frost and snow follow.

If you got in a sowing of garden peas in February, put in another at the end of March. If you want to get your very early cabbage, cauliflower, and lettuce

March 20th, and the rest April 1st.

Lilies that are to be ready for Easter ought to have their buds fully half grown by the first of March. If they are not, force them; if they are more than half grown, retard them.

It is well to have both azaleas and lilies for Easter pretty well along, commencing to bloom soon after the middle of the month, so they can be hardened off a little then. For hardening, if you have not a cooler house, put the plants in a shed or cool cellar. Such treatment prevents the blossoms from being flabby and makes them last much longer.

People who have a small greenhouse and a hotbed in connection with it, and desire such things as geraniums, oleas, and a general variety of bedding plants, ought to have the cuttings all in at the latest by the first of March, and be preparing a hotbed to receive them. When the cuttings are rooted, pot them and move them into the hotbed.

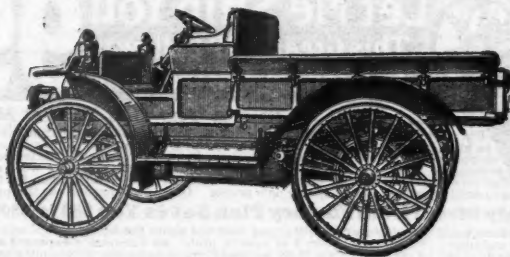
The hotbed for such plants has to be kept warmer—that is, closer—than one used for things like lettuce and radishes. And take advantage of the greater warmth of this bed by using it for early cucumbers and melons. Plant the cucumbers and melons in a good barrow-load of turfy loam dumped in the middle of the bed. The other plants can be set all around the edges of the bed, and when they are removed, the vines can have all the space to themselves. The cucumbers and melons can be started by the middle of the month.

## Elsie Did Her Part.

"Thomas," said mother, severely, "someone has taken a big piece of ginger-cake out of the pantry." Thomas blushed guiltily.

"Oh, Thomas," she exclaimed, "I did not think it was in you!" "It ain't all," replied Tommy, "part of it is in Elsie."

## International Harvester Motor Trucks



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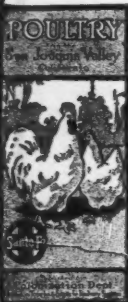
## 100,000 Families will move to California within two years.

That is a conservative estimate. Thousands of people are making their plans to go to California during the great Expositions, and many will remain. By the end of 1915 the price of a good farm in the fertile San Joaquin Valley will have greatly advanced.

This is the carefully considered conclusion of those having the greatest possible information on the subject.

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There is no space here to tell you of the wonders of the San Joaquin Valley. That is why we urge you to send to-day for our books describing in detail the valley as a whole and the special industries, "Dairying" and "Poultry-raising," which have proven so profitable as major crops or as quick money-getters until an orchard can be developed.



You are under no obligation to go further; but you will get much information that must be of value to you if you will write for these books to-day and read them carefully. Then, if you wish, I will be glad to give you first-hand information about the several sections of the valley, the value of the land, the crops best adapted to the various sections, and anything else that you care to know.

I also will tell you of the work of the Santa Fe Agricultural Department, which furnishes expert advice to those who are on the ground, and this without charge.

A post card will bring the books.

C. L. Seagraves,  
General Colonization Agent, Atchison, Topeka & Santa Fe  
Railway, 2241 Railway Exchange, Chicago.



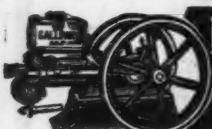
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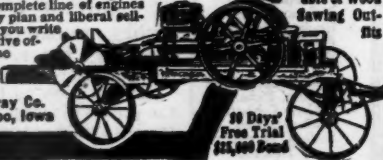


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SAINT LOUIS

Some Advice on Hitching Your Wagon.  
Written for Green's Fruit Grower by E. W. Stratton.

(With Apologies to Emerson.)

"Hitch your wagon to a star?"  
Why, by all means, if you can—  
But celestial things are far—  
Few are they who make the span.  
Ordinary mortals find,  
On the roads of Every Day,  
That they may be left behind,  
If they'll ride no other way.

"Hitch your wagon to a star."  
But, while waiting for the hitch,  
Don't neglect the things that are,  
Till you're pushed into the ditch  
Never turn the old horse loose,  
Till you've first, quite certain made,  
You've a star within your noose—  
And that it your pace will aid.

"Hitch your wagon to a star?"—  
Yes, the poets all advise,  
That our progress it will mar,  
If our eyes turn from the skies.  
But don't sit star-gazing, when  
You should carry the home load.  
If the stars won't pull you, then  
Use horse-power on the road.

Economy of the Low-Down Wagon.  
Written for Green's Fruit Grower by  
J. S. Underwood, Ill.

The use of the low-down farm wagon has been widespread and rapid in recent years. There are so many advantages in using a low wagon that it is somewhat strange its merits were not discovered long ago. Possibly, the prejudice against the use of a low-down wagon is due to the fact that with narrow tires there is a heavier draft. It has been conclusively shown, however, that although a low-

wagon, which possibly has axles and other equipment a little stronger.

The height of the wheels is a matter of importance. A good many farmers do not favor the extremely low wheel, as they claim it pulls heavier and has no particular advantage. Experience has shown that 28-inch front wheels and 32-inch rear wheels are the most satisfactory for general farm use. This, however, is a matter of taste, but the lower the wheels, the better. Of course, they should have 4-inch tires or wider.

TRAINING IN APPLE EATING.

Do You Know What Varieties are Suited to Certain Seasons?

It is said by apple shippers that over-production is never the cause of low prices, but rather, under-consumption, since in years when the yield is large hundreds and thousands of people of moderate means never see a piece of the fruit. It is believed that many persons are unaware of the healthful effects of eating apples, and it is set down as almost a certainty that not one person in several hundred knows what kind of apples are suited to particular seasons.

To failure to recognize and follow the reasonable adaptability or edibility of apples is set down the failure of many to appreciate to the full the joys of apple-eating. It was remarked at the Cleveland convention of the association that when one put his teeth into a Ben Davis or Arkansas black in November he was



Low-Wheeled Wagon for Drawing Fruit.

wheeled wagon pulls heavier under certain conditions, such as rough or muddy roads, than does a wagon with high wheels, there are so many uses to which the low-down wagon may be put on the farm that every farmer and fruit grower should have one or more.

It is still a debated question whether the wagon with low wheels pulls heavier than one with high wheels on public roads. Careful tests have shown very little difference. The great work in connection with hauling comes in loading and unloading. As a labor saver in this direction, there is nothing to compare with the low-wheeled wagon. Even if it does take a little more team power to pull the load, there will be plenty of horses after the owner is gone.

The wagon with low wheels is a great saver of strength. It is the last inch or two of the lift that taxes most the strength. In the loading and hauling of fruits, vegetables, stone, earth, farm machinery and, in fact, anything, the wagon with low wheels has so many advantages that the ordinary high-wheeled wagon is hardly to be considered. By the use of a low-down wagon, one man can frequently do the work which would otherwise require two.

There are two ways in which wagons can be secured with low wheels. One is to buy low wheels and use them with the running gear of the high-wheeled wagon. Another is to purchase the complete

not likely to care for apples for some time.

The advertising campaign will be designed not only to educate the public in the benefits to be derived from apple eating and the reasonable uses to which various kinds of apples are fitted, but also to educate the shippers and dealers to ship the right kind of apples at the proper season.

"Study Marketing More and Production Less, for Present, at Least."

Secretary Bassett of the Michigan State Horticultural society was the chief speaker at a recent meeting of Oakland county, Mich., growers, held at Pontiac.

"Increase the consumption and cut out the middleman, who doesn't do anything," he said. "You can do this by co-operation. You are devoting all your time to the study of production instead of marketing and distribution. Does the man who manufactures automobiles peddle them around the country? He has a sales department. The farmer tries to do the whole thing. He says, 'This is my stuff and I'll sell it myself.'"

"An attractive label is a good way to advertise. Why don't you farmers have a label for Oakland county Steel Reds? There is no reason why you should not build up a reputation for them and get a box as Hale does for his apples, which are no better. We must pack apples better to meet the western competition."

"I stopped at the interurban station in Detroit to buy some apples. The Jonathans from the West were selling for five cents apiece and the Michigan apples for sale, which had been sent only a short distance, were all bruised and not fit for market. The western apples had carried perfectly across the continent. I want to see the time when Oakland county will furnish Detroit with apples. The market belongs to you, but you can't supply them with bad fruit. Carefully grade your apples and advertise them."

I try to increase the power given me to see the best in everything and everyone, and to make that best a part of my life. To what is good I open the doors of my being and jealously shut them against what is bad.—Helen Keller.



# Regaining Health Through a Fruit Farm.

Written for Green's Fruit Grower by John E. Taylor.

A great many people when run down in health spend hundreds of dollars to physicians for a cure. But there is a man in Maine who decided that he would invest his money for the purpose of regaining his health in an orchard, and now he has 1500 trees and his farm has been made one of the experiment stations of the United States' agricultural department.

About six years ago this man was an editor of the county newspaper and he was forced to leave this business on account of failing health. Prior to this he had studied sometime farming and he decided that it would be profitable for him to start an orchard along with his health seeking.

He advertised in the papers for a farm that was adapted to apple growing and he bought one on a hill of several hundred feet elevation. His first work on the farm was to set out 1,000 apple trees. He had a fairly good orchard on the farm of nearly 500 trees, and he then proceeded to trim these up, putting them in good bearing condition. He pruned them and plowed between the trees. He sowed it to rape and as soon as this was up, having fenced around it he turned 50 pigs and hogs into it. Next year in his orchard he plowed up between the trees and planted corn. The result was very satisfactory. One tree at the end of each row he left without plowing and planting around it. On trees that he had planted around, the branches grew about 16 inches and the others about six inches.

The first winter after this man bought the farm and had set out his orchard he went to the University of Maine to take a short course in orchard work and in this way he learned many things about the care of an orchard and the methods of setting out trees.

His orchard at present though not at a bearing age has as yet cost him nothing. The crops between the trees have yielded him profits equal to the expense of setting out the orchard and caring for it up to the present time.

The orchard after it is two years old should be sprayed at least twice a year and sometimes three times using at one time lime-sulphur and at another time arsenate of lead, one being used in the fall and the other in the spring. He considers that the arsenate of lead should preferably be used when the petals have fallen and never should be used when the tree is bearing fruit.

His own experience has been with his orchard of 1,000 trees that the replacement of trees the first year was 50 trees to the 1,000 and then each year thereafter they averaged 10 trees. The replacement costs 45 cents each.

This new orchard is a model of its kind. The trees were planted two years ago and a full thousand of the Stark, McIntosh Red and Gano varieties were set. After the ground had been prepared, a civil engineer was employed to lay out the orchard with geometrical exactness. There is nothing else like it in all Maine, and it matters not which way the rows may be sighted they do not vary the fraction of an inch. This man says that the six dollars per day paid to the surveyor was well expended in the satisfaction the orchard now gives in its exactness of planting. Twenty men were employed to dig the holes and set the trees and the work was all done in three days. As usual an exact account was kept and it was found that the cost of planting the trees was eleven and three-tenths cents each. This cost also included the time and labor of pruning the limbs and roots before setting. During the first winter several trees were broken down by the snow but these have been replaced and the orchard of 1,000 trees is intact. This man believes that when this orchard is ten years old it will be equal to \$10,000 at interest. This man has regained his health and nothing has been paid to physicians for it.

## Treatment for Peach Tree Borers by Use of Lime-Sulphur Solution.

Hundreds of growers of peach trees are now asking what to do for the peach tree borer, which is regarded as one of the very worst pests of these trees. A prominent grower in Central Pennsylvania wrote to State Zoologist H. A. Surface at Harrisburg, asking for information as to the best treatment to prevent future attacks of his trees by the borer. He received a reply instructing him to prepare the lime-sulphur solution by boiling together one pound of lime and two pounds of sulphur with each gallon of water, and apply it as a spray or wash around the base of each tree. The directions were as follows:

"You must apply the lime-sulphur solution at least once per month during the middle of each month of June, July and August, and possibly also September. One treatment is not enough. I have tried this and know for certainty about it from personal experience.

"The way I do is to make the application of lime-sulphur solution strong, the same as for San Jose scale, but with some sediment present, putting it on with brushes, or with the spray pump with the cap removed from the nozzle. Do this about the middle of June after having removed the earth from around the trunk of the tree with a hoe, making a little ditch or groove around the base of the tree. Just as soon as this is dry I replace the earth, mounding it up to one-half foot or more. I always make the application one foot or more above the ground. The next time leave the earth mounded, and make it so that the solution will be pretty sure to penetrate the top of this mound. Use plenty. One pint to one quart to a tree is not too much if the tree is large. On small trees one-half pint may be enough. Also, add about one ounce of arsenate of lead for each gallon of this material, which is practically three pounds to fifty gallons."—Professor H. A. Surface, in the Zoological Press Bulletin.

## Fruit Growing in Western Pennsylvania.

Green's Fruit Grower.—In recent years the adaptability of this region to the growing of all fruits of the temperate zone has been demonstrated and many large orchards have been planted. Some of these are bearing, others are just being developed. Buyers are beginning to come here in September or October, and they often say: "I never knew before that you raise apples here." Yet, my crop last year was 9,000 bushels, and this year it is 5,000. Of course we spray, prune, mulch, and take all the scientific care of our orchards that we can afford.

Labor is so high, and prices in full years are so low, that we cannot do as well for our orchards as we would like. My acreage is 40 acres, but only half of that is in bearing. I am planning to put 20 or 30 acres more in fruit. Other orchardists here, have even more than I have. The largest orchard in Pennsylvania is that of Prof. Surface, who is at the head of the Orchard Extension Division of the Pennsylvania Department of Agriculture. Prof. Surface is now sending to the fruit growers of Pennsylvania a newly discovered parasite to destroy the San Jose scale. I received mine to-day and if it exterminates this fearful scourge from the orchards it will be worth millions of dollars.

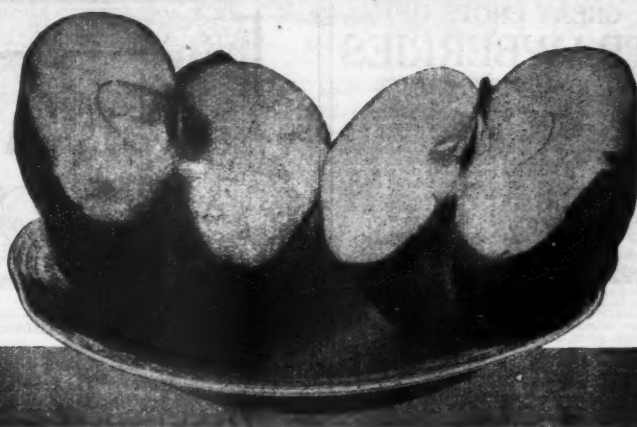
The drouth of last summer reduced the size of the apples on scientifically treated orchards by at least one third, and the number of bushels by as much. Of course, orchards not cared for did not bear at all. The flavor of Pennsylvania fruit is unsurpassed, and its keeping qualities are excellent. Old orchards are mostly Ben Davis, Baldwins, Greening, Russet, and Golden Sweet. The new orchards are being planted with newer varieties. Most growers here store in their home cellars, and market by the wagon load in January and February. I am barrelling mine and hauling by the wagon load to cold storage in New Castle (7 miles), to sell next May. The roads are so miserable that it takes three horses to haul a load, 22 barrels, and even then, they can make only one trip a day. We had to pay \$1.50 a day to pickers, besides free board. The greatest calamity ever known here, to orchards, was the terrible snow storm of November 9th and 10th inst. when two feet of snow fell. The leaves had not fallen, and the trees were wet with the great rain of Saturday, November 8th. All day long for two days, the snow fell, clinging to the trees, breaking down branches, uprooting trees, and splitting trunks at the forks. I estimate my losses in trees destroyed, at over \$2,000. As the orchard will never again be so beautiful as it was, the sentimental loss is even greater, and cannot be estimated in dollars and cents. As a consolation, in part, I will plant a new 20-acre orchard. The probabilities are that there will not be another November storm for 100 years that will compare with this one for severity and for havoc.—J. C. M. Johnston, Pa.

## Insures Pear Tree for \$30,000.

Los Angeles, Cal., Dec. 18.—An alligator pear tree, owned by H. A. Woodworth, has been insured for \$30,000 by Lloyds of London, against fire or frost.

Note: This from "Rochester Evening Times." Reply by C. A. Green: The alligator pear does not belong to the pear family. Its correct name is Avocado. It is a tropical fruit, brown in color with a greenish yellow pulp of delicate flavor, known by some as vegetable butter, much esteemed in the West Indies. I never have heard of a true pear tree valued at or insured for \$30,000. This seemingly extravagant insurance is owing to the scarcity of this tree in this country.

To be intending to live a new life, but never find time to set about it—this is as if a man should put off eating and drinking and sleeping from one day to another until he is starved and destroyed.—Tillotson.



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Firm, and solid as a cling.  
Perfect freestone.  
Ships almost like apples.  
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Brings double the price of Elberta.  
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Vigorous, abundant bearer.

The early growers of this great peach will take the premium profits. Remember the first planters of Elberta. Yet here is a peach that outclasses any Elberta that ever grew. Tested for over 10 years before Mr. Hale would put it on the market.

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We furnish best-grade, heavy, stocky plants and trees of mailing size at special, low prices. Well developed, and will make large, thrifty orchards. We pay postage.

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yield more dollars per acre and give quicker returns than any other crop. Set one acre to Kellogg's Pedigree plants this year, and put from \$500 to \$800 in the bank next year. Our Book tells you how. IT IS FREE.



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No grape grower can afford to be without this practical book. It contains valuable information; tells you things that we have learned only after years of practical experience. Planting, cultivating, pruning. All the store of helpful knowledge is yours for the asking!

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## Fruit Crop is Determined by Winter Care of Vines.

Written for Green's Fruit Grower by John E. Taylor.

The berry plants, bushes and vines require care in winter. The result in additional fruit is worth while. This is especially true in strawberry growing. The ordinary fruit grower is of the opinion that when he puts the straw or boughs on his strawberry bed in the late fall that is all that is necessary until he removes them in the spring.

This has been proved otherwise by a man in Maine who has had unusual success with strawberry beds. This man as soon as the ground freezes in the fall places straw upon his strawberry beds and sees that there are no ditches running crosswise of the piece where spring rains will wash out the plants. When the snow piles down and the spring is about to approach, and the snow begins to melt, and spring rains come, he shovels ditches around the piece so that the water will not wash down over the patch but will go on the outside of the patch. By this method he is able to save many of his plants that otherwise would be washed out.

If at any time there should come a big rain through the winter months taking off

has been harvested, in order that the new canes will have a better chance to grow and develop into strong fruiting wood for the next year's crop. Four or five of the more vigorous canes should be left, all other canes or suckers being cut out. It is in the pinching back of the young canes at an early stage in their growth that the necessity for support of any kind is eliminated. If the canes are allowed to grow to a height of four or five feet before they are checked, they will naturally have to be given support. If, however, they are stopped when about 30 inches in height, they will make such a stocky, heavy growth as will enable them to carry their fruit unaided by support of any kind.

The pruning method saves time, labor and expense, and permits of cultivating the plants to better advantage.

### Preparing the Strawberries.

Every family should have a strawberry patch for home use, and it will be much easier to get the final preparations and the planting attended to if the ground is well prepared. The soil will absorb moisture better and hold more of it, if it is plowed in the fall, and the under soil will be more compact when planting time



The new raspberry, Syracuse, which has been fruiting successfully for about eight years at Green's Fruit Farm. With one exception it has stood the severe climate of this northern part of western New York. It is of large size, beautiful bright red color, reasonably firm, and of delicious quality. It makes but few plants, which is in its favor, since red raspberries propagated by suckers decline in productiveness owing to the large number of suckers which spring up around the parent plant. The price of plants of Syracuse raspberry must ever remain higher than Cuthbert owing to the fact that it does not make one-twentieth part of the young plants that the Cuthbert makes. Syracuse raspberry is particularly desirable for the home supply of fruit, owing to the fact that it remains in bearing for nearly two months, furnishing a continual supply of delicious fruit for the table.

the snow fast, he goes over his patch and finds out if there is any place where water is undermining any of his plants, or if any of the ditches that he has made in the fall are filled up so as to form ice on his bed to the injury of his plants. When spring comes and the snow is gone he goes over his patch with a fork, lifting the straw from the plants but does not remove it from the bed. This lightens the straw from the plants but protects the plants during the cold nights and mornings of the early spring.

Last year which was an uncommonly bad one for small fruit because of the lack of snow, many of the farmers lost their entire patches because of the ice, but this man lost a very few plants because he kept his bed drained as one would keep a good road drained and, being covered well with straw, his success meant a bank account to him during the summer.

### Training Berry Bushes.

The trellis system of training berry bushes, particularly blackberries and raspberries, while employed to some extent, would seem to be expensive and unnecessary, says Pennsylvania Farmer. It involves considerable expense for material and labor and is entirely superfluous, provided proper pruning has been done.

It is quite essential that berry bushes should be pruned if they are to bear from year to year, and when they are correctly pruned trellis supports will not be needed.

All the old wood should be cut out and removed as soon as possible after the crop

comes, so the roots can take a firm hold, says Farmer's Guide.

Give the ground a good dressing with barnyard manure that is fairly well rotted, if you have it, and some droppings from the hen house, also, for they are rich in nitrogen, and their value is not so apt to be lost, unless exposed to rains and badly leached. Plow as deep as you can, and leave rough, so it will catch and hold the snow and rains during the winter.

One who has never tried it cannot know what a strawberry bed means to a family, provided it is cared for so the berries will be large and of good flavor and the work of picking not be more than the berries are worth. I have gathered nearly a bushel of magnificent berries from seven rows about fifty feet long at one picking, and we always had all the berries we could use and sold a good many, though we did not aim to grow to sell. We have cut our patch down to five rows so that we would not have so many more than we needed.

If you get good strong plants and set as early as you can work the ground at all you will get a good growth the first summer, and they will fill the rows well. I have gathered quite a few berries the first year from an early planted patch, but they were not so large as the second year.

### A Good Medicine.

Mother—Johnny, did you take your cough medicine regularly in school, as I told you?

Johnny—No'm; Tommy Rodd liked it an' he gimme an apple for it.

## Get at the root of things

when buying berry and other small fruit plants. Heavy top growth is actually a disadvantage unless the plant has sufficient roots to sustain it. Our bigger, better roots—due to unexcelled growing conditions—assure bigger yield of big berries. Get our New Catalog—lists only the better varieties, gives full cultural helps. No novelties that have failed to prove their merit under our severe test are included. This de enable Small-Fruit Catalog is free—contains berries of all kinds, grapes, currants and garden roots. Write for it today.

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# THE FARMER AND PARCEL POST

How to Get City Orders. Much Valuable Information.

Written for Green's Fruit Grower by Calvin Forbes.

Perhaps the average farmer and fruit grower have not fully come to a realization of the wonderful benefits that the new ruling of the post office department will bring to them.

After January 1st, fifty pounds may be carried by mail at a very low rate. This does not mean from an office in one city to an office in another city with all their pending delays, but from the farmer's door to the door of his customer in the city. This not only brings cheer to the farmer, but to the city dweller also. Take the two items of butter and eggs alone, and these are the two necessities that are the hardest to obtain. Five dozen eggs and five pounds of butter can be mailed for much less than a middleman's profit would be. Indeed the mail would be no more than the cost of delivery of the middleman. If the farmer or fruit man shipped his produce say twice each week, the customer would be sure of absolutely fresh goods. A dozen strictly fresh eggs delivered to a customer in Chicago at forty cents would be a better purchase than three dozen packed eggs where one-half were rotten and the other half stale.

Many other articles such as canned fruit, jellies, jams, apple butter, pickles, and indeed fresh fruit and vegetables can be delivered in the same way. Through this means the producer can realize better prices and not be at the mercy of the scaler, and the consumer can obtain better goods at a much lower price.

Right here is the opportunity for the farmer to establish a reputation for himself. If he is careful to give every customer the full value of his money, sending away nothing but clean, sanitary goods put up in nice clean secure packages, he will find a good market for all that he can raise.

At this point the middleman asks what will be done in his behalf. There is but one answer: If conditions change so that it is not necessary to employ an agency with all of its paraphernalia to hand these goods from the producer to the consumer, he will have to do the same as some of the rest of us have, viz. get out on the unmaned land and produce, and thus add to, instead of taking from the wealth of our land.

Note by the Editor: The most important problem which the fruit grower and farmer must solve in connection with the parcel post is how to get their orders for the farm produce from the city man and villager.

The difficult problem always is in getting the business and not in taking care of the business after you get it, although the latter is very important. It requires more experience and skill to establish a mail order business, and that is just what we are talking about, than it does to conduct the business after you have secured it.

The ruralist ordinarily has but few acquaintances in the city. How is he going to get acquainted with the large number of city people, how shall he induce city people to send him their orders, and how is he going to get his pay from city people for the produce he supplies? The city resident will not always send money or check with his order. Shall the farmer trust these city people? Unless he knows his customer it would not be safe to trust the average city man, for in every village and city there are many people who get a living, year in and out, by running up bills with the grocer and other trades people that they never pay and never intend to pay. Many of these tricky people pay no rent. Their system of avoiding rent is to live a month or two or a few weeks in a place and then move their scanty furniture to a new abode when their landlord presses them for back rent.

If you have a few friends or relatives in the city whom you have been supplying with fruits and other farm products you can ask these friends to recommend you to others as they may have an opportunity. Perhaps some customer, who has a friendly feeling for both her city and her country friends, may send in what may be called a club order, and ask her neighbors to call at her house and get their share of the order. The farmer in such a case can afford to make a special offer for a large order.

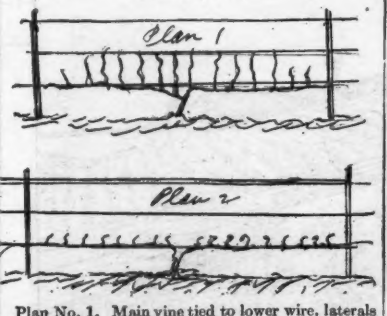
But in my opinion the best opportunity to reach city people will be to prepare a circular, and it need not be large, possibly a postal card would cover it, stating what you have for sale and the prices, and mail it to a large number of prospective customers, soliciting their patronage and calling attention to the new facilities offered by the United States Government, by which money can be saved and fresh products secured.

How to get these names and addresses of city people is another problem but not a difficult one. The city directory, also

the telephone book gives the name and street address of nearly all city people and states in most instances what their line of business is. In the back part of most city directories there are a few pages devoted to the names and addresses of merchants and other pages to the names and addresses of bankers, of tailors, dressmakers, and people in other lines of business. My suggestion is that you pay particular attention to such lists of names as bankers, physicians, lawyers, clergymen, manufacturers and hardware merchants. If you follow in the above line of work you will find yourself doing a mail order business. If you are considerate, careful and desirous of delivering a superior article at a moderate cost with promptness, it is possible for any ruralist to build up a profitable trade of dealing direct from farm to city. There are few who will succeed at it and there are probably many who will fail, for it requires some skill and tact to manage such business even in the small way that I have set forth.—C. A. Green.

## Trimming Grape Vines.

Mr. C. A. Green:—Kindly give me some advice in regard to trimming my Moore's Early grape vines. They are about four years old and making heavy growth. Have trimmed and tied as indicated by Plan 1, but afterward thought perhaps I should have cut back as indicated by Plan 2.—J. H. Barker, N. H.



Plan No. 1. Main vine tied to lower wire, laterals tied to second wire and cut off there, laterals being left about six inches apart.

Plan No. 2. Main vine tied to lower wire and laterals cut back to two or three buds. Laterals about six inches apart as in No. 1.

Reply: My opinion is that your second plan of pruning the grape vine is much better than the first. You will undoubtedly get much fruit on both of these vines as you have pruned them, but the clusters will not be so large on the vine where you have left so many canes as they will be on the vine where the new wood has been pruned back to three eyes.

## How To Estimate A Woodlot.

Most woodlot owners sell their standing timber for a ridiculously small price, because they do not know how much they have. By using the following method a fairly close estimate may be made:

1. Count all the trees in a circle 118 feet across;  $\frac{1}{4}$  acre.
2. Select a sample tree as nearly average as you can.
3. Determine how much of the tree you can saw (or use for any purpose) in 16-foot logs (8-foot logs count as halves).
4. Add the top and bottom diameters inside the bark, and divide by two. (Only solid wood considered, bark excluded.) This will give you the average diameter of the used length.
5. Square average diameter thus obtained, subtract 60, multiply by .8 and you will have the contents of an average 16-foot log.
6. Multiply by the number of logs in the tree and then by 4 times the number of trees on your plot (since  $\frac{1}{4}$  acre plot was used) and you will have the contents of that acre in board feet.

Example. Basswood, 85 feet total height, can saw 40 feet of it (24 logs). Top diameter inside the bark, 10 inches; diameter of lower cut, inside the bark, 20 inches (average diameter 15 inches).

15 squared = 225; (225-60) x .8 = 132 B. F. contents of average log. 132 x 24 logs = 3300 B. F. contents of tree. 10 trees on plot 330 x 40 = 13,200 B. F. per acre.

By selecting 8-10 sample plots in different parts of your woodlot the average stand per acre may be found. Before selling the woodlot for a lump sum, get the correct acreage (measure if necessary), take 8-10 sample plots and find how much you are being offered per thousand feet board measure.—The New York State College of Forestry, Syracuse, N. Y.

Mr. C. A. Green:—I am a subscriber to a number of papers and magazines, but prize Green's Fruit Grower more highly than any of them. As a magazine for the farmer, fruit grower and his family, think it unequalled.—W. R. Taylor, Girard, Kansas.

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## The "JOY" BLACKBERRY

which came through with every bud and terminal in perfect condition.

brings joy to all who grow, sell, or eat it. It is immensely profitable to the market grower, and "a joy forever" to the amateur gardener. The canes are of ironclad hardiness and need no staking. They yield heavily, all the canes being literally loaded with fruit every year. I have tested this berry for several years, and am willing to stake my reputation upon it. In the winter of 1911-12 every Blackberry in my trial grounds was damaged more or less except the Joy,

**Grow this Berry. It is Hardy and Wonderfully Productive**

JOY Blackberries are coal black, and large, almost as thick through as they are long. In luscious flavor they surpass by far all other Blackberries I have ever grown. In my long experience with this berry its canes have never been affected, even slightly, by orange rust or other fungus disease, and I believe it is immune to them. A full assortment of Strawberries, Raspberries, Blackberries, Grapes, Currants, Gooseberries, Garden Roots, Hardy Perennial Plants, Shrubs and Vines, Evergreen and Shade Trees, Roses, Hedge Plants, etc. Illustrated descriptive catalog replete with cultural instructions, free to everybody. Established 1878. 200 acres. Quality unsurpassed. Prices low.

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are grown on new fertile ground. They are large—heavy rooted—sure growers. The kind that produce profits—big profits—quickly. Though grown by the millions, they have the same care, the same attention, the same cultivation that you would give a choice little garden patch of but a few plants.

**Read Our Guarantee** All plants guaranteed to be first-class and true-to-name, packed to reach you in good growing condition, (by express) and to please you, or your money back. That's a liberal, fair and honest guarantee. You take no chances whatever. Send for the book today. Get our prices. Then rush in your order.

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**YOUR success as a fruit grower depends largely upon securing berry plants from carefully grown stock. You are sure of the quality of all berry plants and small fruits when you**

**Buy Allen's True-To-Name Varieties.**

We have all the best of the new and standard varieties. Hardy, prolific plants grown in the nursery with nearly 30 years successful experience back of them. Allen's Strawberry plants will yield bigger, better crops.

**All Shipments of Plants Guaranteed to be carefully packed** —to be from fresh stock and in good condition.

**Allen's Book of Berries for 1914**

This book is profusely illustrated and full of valuable information to fruit growers. Tells how to plant and cultivate Strawberries and other small fruits. It also lists and describes Allen's True-to-Name Blackberries, Raspberries, Currants, Grapes, Asparagus, etc. Every gardener, farmer and fruit grower should have this 1914 Berry Book. Write today for free copy.

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**Allen's Strawberry Plants Bear Large, Luscious Fruit**

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**W. F. ALLEN 55 Market Street, Salisbury, Md.**

## At the New York State Fruit Growers' Meeting Held in Rochester, N. Y., January 7-9

The greatest interest was shown in the exhibits of the various sprayers. The leader in this line is easily the "FRIEND," (made at Gasport, N. Y.) a number of KINGS and QUEENS having been sold. One prominent grower, after carefully looking over the many different machines on exhibition, made this remark — "I can see that the "FRIEND" is well made—every little detail so well thought out and so substantial. I have a habit of buying about one power sprayer each year and it now looks like my next machine will be the "FRIEND." Many growers made similar statements.

The new machines did themselves honor and were the center of attraction throughout the show. Great interest was also shown in the "FRIEND" tank filler, shutoffs, nozzles, hose, etc., many saying, "Well, I've tried 'em all and am now coming to the "FRIEND." A noted horticulturist remarked, "You can not find a single worth-while feature in any of the machines in this hall not first made and introduced by the "FRIEND" Co."

Mr. Henry D. Lewis of Annandale, N. Y., a very prominent grower, said, "I have one of those QUEEN machines bought six years ago, and it's the best thing in the world, always ready and still working to my complete satisfaction, but now that I have more work I can use another machine, and" (he bought).

An influential orchardist who has been using an "FRIEND" machine said, "My neighbors have "FRIEND" outfits; they can go out and spray when I can't. I notice these fellows are all "FRIEND" boosters and never willing to change for other makes" (he bought).

Mr. George R. Schaubert of Ballston Lake, N. Y., vice-president of the Association, placed his order and drew his check for a QUEEN, saying — "I like it best, and furthermore I like the way you handle correspondence, my letters having prompt personal attention."

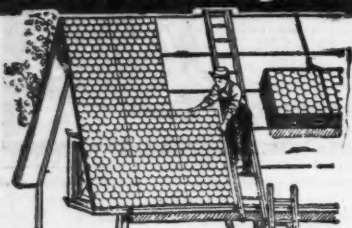
Mr. E. C. Gillett, Assemblyman, secretary of the Association, and a "FRIEND" user, was much pleased and interested in the new sprayer stunts exhibited.

E. W. Catchpole of North Rose, N. Y., a practical grower of the Empire State placed his order for a QUEEN.

The "FRIEND" Company reports that their actual sales at this meeting alone netted them nearly \$2500. Besides this they have naturally an interesting list of prospects.



## Lowest Price Ever Quoted on STEEL Shingles



Write us the dimensions of your roof and we will make you a price on the complete job that will simply startle you. For we not only manufacture the finest of STEEL Shingles, but our prices, quality considered, are lowest. Made so because we sell direct to users and because we now have 125,000 customers. Even if you've only a small shed to roof, don't fail to get our offer. We positively guarantee to save you big money.

## Edwards STEEL Shingles

do not burn or rot or rust. Far outlast ordinary wood. Prepared paper, composition and corrugated steel. Come in big sheets, hence very easily put on. No painting, no special tools, no expert workmen.

Edwards STEEL Shingles won't rust. First, because Edwards' by his famous "Tight-Cote" Process, dips each sheet of steel in melted zinc after cutting. Thus the edges, as well as sides, are rust-proof. Other makers don't go to the expense of galvanizing the edges. Second, Edwards protects each nail hole, by a zinc-sitting over-lap. (See picture at left.) No chance for rust to get a foothold. This is Edwards' Interlocking Process, the patents for which are valued at \$200,000.

## Freight Paid

The price we quote includes the freight; in fact, it's the entire, total cost of a new roof. It is the lowest price ever made on a good roof. Just get it. Then see if any other concern can sell so low. If we could only print the price here, we know we would win you. But that's not possible, because raw steel goes up or down every few days. And that, of course, changes our price. Just now raw steel is not advancing, so our price on Steel Shingles is very low. Write at once and get the benefit of present prices. If you can't give dimensions of your roof, write us on coupon below and get prices. Ask for booklet 254.

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Are best quality. I have 3,000,000 of them. I guarantee satisfaction and safe delivery everywhere. All of the best varieties. My prices are the lowest. Wholesale and retail catalog free. Write today and save money on your order.

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## MILLIONS OF STRAWBERRY PLANTS

true to name, Asparagus roots. Seed corn with a record of 214 Bushels from one acre. Second crop seed potatoes. Write today for complete Free Catalogue. Worth dollars. JOHN W. HALL, Marion Station, Md.

## 850,000 GRAPEVINES

69 varieties. Also Small Fruits, Trees, etc. Best rooted stock. Genuine, cheap. 2 sample vines—10c. Descriptive price list free. Lewis Roach, Box E, Fredonia, N. Y.

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The ST. REGIS is the greatest raspberry ever known—bears firm, juicy, crimson berries from June to October; fruits the first season planted; prolific in all soils; hardy in any climate. Order from our very choice and guaranteed stock; 12c each or 5 for 60c, post paid; 15 for \$1, 50 for \$5 or 100 for \$4, by express but NOT prepaid. The most extraordinary blackberry of recent introduction; one man wrote he picked 340 quarts from a 3-year old plant. 10c each or 5 for 60c, post paid; 15 for \$1, by express NOT prepaid. We grow hardy, choice Trees, Vines and Shrubs, guaranteed true to name—get our finely illustrated FREE Catalog showing Apple, Pear, Peach, Plum, Cherry Trees, Roses, Shrubs, Berry and Strawberry Plants. F. W. BROW NURSERY CO., ROSE HILL, N. Y.

## My Native Land.

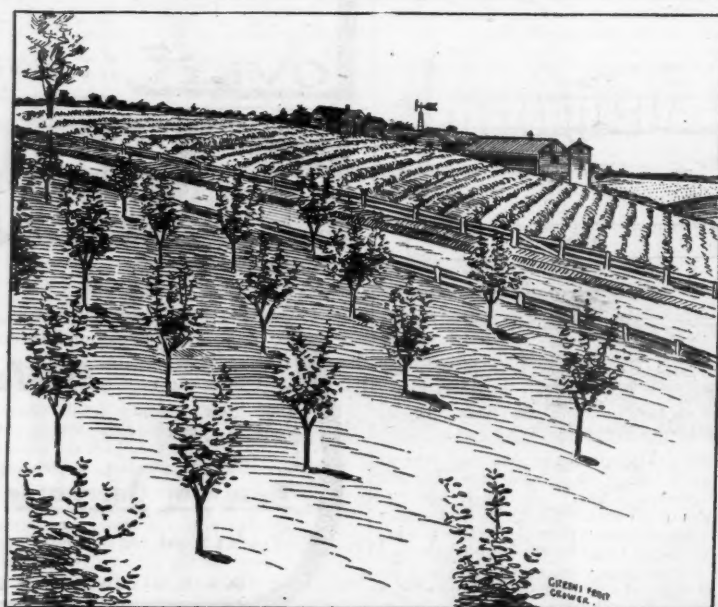
Written for Green's Fruit Grower by Geo. D. Lishardt.  
America, my native land,  
Blessings from every land  
Are said for thee.  
Blessings from our God above,  
Of truth and perfect love,  
All thanks to Thee above  
Great Trinity.

America my country dear,  
Smiles and not a tear  
Hover o'er,  
Smiles of joy and pride  
Rise up from every side  
To Thee, Great One who died  
To save us all.

## Twenty-five Cents Offered for Each Apple Containing a Worm.

We have about 35 acres of apple orchard, half of which is in good bearing. All of this is sprayed three and four times yearly, says Geo. W. Mish in The Practical Farmer. All parts of the pump exposed to acids, etc., are made of brass. We were advised in the purchasing of this pump, by one of the most experienced orchardists in this section, but he cautioned us about getting the smaller sizes, as they are too slow for an orchard of any size, so we obtained the large size and it has given the best of satisfaction for over eight years. Of course, we expect to get a power outfit in the future, for, as our orchards grow older, it requires so much more time to cover them. Most fruit men here are using outfits propelled by the gasoline engine, and a few are using the compressed air method. The latter is a more expensive outfit to obtain, but as far as service goes, I hear no complaint from either

which is from the opening of the blossoms to the closing of the calyx. Don't wait until some of the calyxes are closing, since the spray must be inside of the blossom end, in order to catch the moth at the start of its destruction. We spray again in 10 to 12 days, with the same solution, in order to catch the after broods. For the destroying of moths we use 2½ pounds of arsenate of lead and 5 quarts of concentrated lime-sulphur solution to 50 gallons of water. From this mixture we obtain the very best of results. We have offered a quarter each for apples found in our orchard having a worker in the blossom end, and no man tries to make wages at it. Out of 1,000 barrels of No. 1 stock, I have not found more than one or two worms in the calyx end. We do have a very few side worms, but not enough to lose any sleep over. We never have to sell our fruit in bulk. We believe in thorough spraying, at the right time, with the right solutions. Always put a good man with the nozzles, for here is the important part. Be sure no leaf is dry when you leave a tree. Move the nozzles up and down until the tree is covered. Our outfit consists of a cylindrical shaped tank of 150 gallons capacity, mounted on a 2-horse wagon. Directly over the tank is a tower which the man with the nozzles should stand in. Our tower puts the operator 5 feet above the wagon bolsters, which is high enough for ordinary trees. We use 15 feet of 1-inch hose, 10-foot reed and two Friend nozzles, and are getting good service.



The above illustration indicates about how the young fruit trees and berry plantations look at Green's Fruit Farm during the first few years of occupancy. Such plantation must ever be of interest not only to the casual passerby but particularly to those who have had experience in planting or growing fruits. Such decorations on the landscape as fruit or shade trees and well kept berry plantations give evidence of thrift and prosperity. Not only this, but such plantations are so far out of the ordinary they indicate originality in the thought and makeup of the owner of such a farm.

The average farmer lays himself open to criticism in following his father, his grandfather and his neighbors year after year for a lifetime, in pursuing the course of those who have gone before him or are surrounding him, or those who are living in his neighborhood. This same criticism can be given to the city man who is pursuing the same system, the same methods and the same forms in his grocery, hardware store, bank or factory. At his father or his grandfather pursued or that his neighbors are pursuing. Any city man who would conduct his business on such lines as these would be condemned to failure. And yet there have been as many changes in the management and occupancy of farm lands in the past 10 to 20 years as there have been in city enterprises during that period.

The progressive farmer should see that by continuous planting or sowing of certain crops of grain upon his farm year after year for 50 years or more, as is the case with most eastern farms, that a change of crops is greatly to be desired. It is well known that crops take from the soil certain elements of fertility that are not required by fruit plants, and that a rotation of crops is more profitable than the continuance of the same crop. Here it is that fruit growing comes in favorably as a new crop on the soil; demanding for nourishment other forms of fertility than that demanded by grain crops which have been so long grown upon the farm.

No one realizes the necessity of changing crops perhaps more certain, than the nurseryman, who finds that he cannot continuously grow blocks of young apples upon the same soil year after year. If he does he will find far less growth the second time he plants apple trees on the same soil. If he persists, after a time he will learn that the young apple trees will be a partial failure, grown on soil that has for several years been devoted to the growing of young apple trees. Different classes of fruit trees require different food from the soil. Thus if the old apple orchard is to be plowed before planting of fruit trees it would be better to plant to peach, plum, pear or cherry than to replace the same plot with apple trees; or berry plants could be set out on the site of the old orchard to better advantage than to plant the same land again to apple trees.

Notice the large and well kept buildings in the back ground of the above illustration. I call attention to this for where you find thrifty orchards, vineyards and berry fields upon the farm you will generally find a prosperous farmer whose buildings indicate prosperity.

method. So, from my experience and that of others here, it is merely a matter of choice and economy as to the power used. Either one will give good service and that is what we all want, for when spraying time comes, there is no time for a balky engine or clogged nozzles, etc. Get the best and avoid trouble and loss of fruit.

We spray for San Jose scale just before the leaves appear in the spring. Be sure you get through before the tender leaves do, or you will have a very backward tree if you burn the leaves. For this spraying we use the home-made concentrated lime-sulphur solution of one to 9; that is, one part of solution to 9 parts of water. We have also used the Target brand scale destroyer, and it did good work. We have had no losses by scale since we have been using lime-sulphur. Now comes the most important spraying of the year, for the codling moth. Are you acquainted with it? If not, you had better get next pretty shortly. For this pest we spray when the trees are in full bloom, which ranges from May 5th to 15th in this section. It cannot be emphasized too strongly that this spraying must be done at the proper time,

The New York State College of Forestry believes that New York will return to her original important position as a great producer of forest products. It can see no reason for sending out to the Pacific Coast or down to the Gulf States for lumber and other forest products when forests can be grown as well, if not better than in the West, right within the borders of the Empire State. Producing our own wood will keep more than \$20,000,000 a year within the State, making our own people that much the richer. Covering our millions of acres of idle land with producing forest will not only make these idle lands, now unproductive, bear their share of the support of the State, but extensive forests mean more and better water in springs and rivers, more game and healthier people because every bit of forest should and will become recreation places for city people.

Work is a great blessing to humanity, and needed rest is just as much a credit to us as work is, and contentment makes both easier. Appreciate what you have, and don't envy any person.

## Cover Crops for the Orchard.

It is no uncommon thing to see a well kept farm and a neglected orchard, says Indiana Farmer. Perhaps the owner does not believe in some of the up-to-date methods of orchard management, or perhaps he thinks he has not any time to spare his orchard and that the fruit will be good enough for home use. If this farmer would spray and prune properly, in one year he would see a great difference. He must not forget to grow a cover crop. No doubt, weeds and grass have been allowed their own way. The young orchard needs to be plowed or disked, and after each rain it needs cultivation during the growing season. After the growing season, sow your cover crop. Cow peas and soy beans are excellent. The disking of your ground keeps down the weeds so that when you sow your crop very few weeds will grow up. You will harvest an abundance of fruit and have the forage as extra returns.

Farmers do not need a very large orchard, a few choice trees and a little care will yield them better returns than a rundown, neglected, large orchard.

Rape sowed in the orchard makes good pasture for sheep. Rye is good too. If your chickens are close, as they should be, they can get plenty of green food the following winter when the snow goes off.

If the farmer has any surplus fruit he can sell it to his city friends and gain them as his customers for each season.

**Never Misses Fire**  
Two strong coil springs automatically move the full rotary disk in the two-quart center-hung hopper.  
It must drop at every hill the number of kernels you set the thumb-screw regulator for. Balances in either hand.

**ACME Planters**  
are light but sturdy and long-lived labor savers. The Acme Compressed Air Sprayer has its pump outside, where it cannot rust. Ask your dealer to show you. If he can't, write for free book, "The Acme of Potato Profit," and name of nearby dealer who can, as 12,000 farmers did last year.

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H. B. RUTHSTEIN, The Steel Shoe Man. Dept. 239 Racine, Wis.

## Kill These Pests

that ruin your fruit and destroy your trees, vines and plants. Get rid of scale, fungi and worms by spraying. Stahl's Treatise on Orchard Enemies (sent free) will tell you how to do it with easy working—and efficient—

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Send \$3 and we will ship outfit complete. Try 10 days and if found O. K. pay balance. If not return and we'll refund your money. Write today

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Box 144, Quincy, Ill.



### Wisdom About the Farm.

Written for Green's Fruit Grower by  
F. H. Sweet, Va.

It is a good time to get after insect eggs and cocoons. You will find them glued beneath the rough bark on the trunks and branches of the trees.

Cut them off at any expense of time and labor, and burn them.

Keep an eye open for "mummied" fruit (dried specimens), black knot, etc., while hunting the insect pests. A lot of summer fighting can be obviated by breaking up the sources of supply.

Mice sometimes work havoc underneath the snow, so trample it down about the bases of the trees after each storm.

Rabbits, too, are bad in winter. A wrapping of tar paper about the trunk of the tree as high up as they can reach will keep them away.

Watch the winter covering on strawberry and other plants that it is not blown or washed away. A few boards will hold the new material that should be added. Straw manure is the best mulch to apply at this season, but do not apply it thick enough to smother the plants.

A foot of long manure placed over the vegetable pits and trenches will keep out the severest cold and make it easier to get out the products as needed.

Examine the flower storage pits and cold frames frequently. Remove the covers and lift the sashes every mild day, but keep them tightly covered when the weather is severe. A blanket of snow makes an excellent protection.

Paths make a winter home appear more inviting. Keep the sides straight and the bottom smooth. A dressing of sand will prevent slipping and will not be as unsightly as coal ashes, sawdust, or other materials.

Rhododendrons should be protected from the winter's sun. Build a skeleton frame on the sunny side and cover it lightly with evergreen boughs.

Shake the heavy loads of snow off the shrubs and evergreens. A few knocks against the trunks with a padded stick will do the work.

Keep busy in the workshop these days. There are labels, flower supports, and a hundred other garden conveniences to be made now while other duties are not pressing.

You can cut down somewhat on the rations of a horse that has very little work. Give him from four to eight pounds of ground oats and corn, fed on chopped hay, in two meals.

Besides these two feeds of grain per day, supply roughage in the shape of shredded corn fodder or timothy hay.

If some work cannot be given every day, turn the horse out in the yard or paddock. Exercise is essential.

A warm stable and warm blankets will effect a material reduction in grain bills, but do not keep the stable warm by shutting in the foul air. Open the doors and windows twice a day and air out the entire compartment. The temperature should not get below 45 degrees nor above 60.

Frozen mud or ice left on the horse's ankles encourages scratches and rheumatism, and these cause a deal of trouble. Better have a piece of gunnysack or cheap Turkish towels to rub the legs dry after every outing.

Perhaps your cows are not paying their board. Start a milk record and find out just where you stand.

Rye straw makes the best bedding. Do not be too economical with it. Place a foot deep under the stock.

A modern stable should contain a wash sink with the necessary fixtures about it for the proper care of the harness and animals. You can have one put into your barn for about \$25.00.

Resolve, whatever you grow, to have it a little better this year than it was last. In the home garden, quality is everything. A garden is more bother than it is worth unless you get fruits and vegetables that are really better than those you can buy. Spend some of the long winter evenings in making your plans for next summer. The spring season advances so rapidly that it is decidedly to your advantage to get your orders in the hands of the dealers early for trees, shrubs, seeds and so on.—F. H. Sweet, Va.

### Soil Fertility.

Editor of Green's Fruit Grower:—The preservation of soil is soon to become the greatest problem the world has ever known. As population increases, farm lands become thriving cities. The produce from the farms of to-day must be increased to-morrow and on less amount of land. Can this be done by raising the same vegetables and grain on the same land, year after year, as is being done in some parts of the middle and western states? Many renting farmers make a practice of getting most of the plant food elements out of the soil, then move to another farm and proceed to rob it of its fertility. What will become of the nation if this is continued?

Other countries are preserving their soil, but can they export products to their

countries should they need it? It is true that soil fertility is being preserved in some parts of the United States, but other parts do not even practice rotation of crops.

Every farmer should make the soil a study, experiment and find what it needs and supply it. Get some good books on the subject and you will be surprised how interested you will become.

God gave us the land, rich in plant food elements, so why not preserve it for your own benefit and for the benefit of humanity.—Charles W. Brown, Ky.

### Grafting Grapes.

C. W. E. asks Green's Fruit Grower for advice about grafting grapes.

Reply: My advice is not to bother with grafting grape vines. For 10 or 15 cents you can buy good grape vines and it does not pay to spend time grafting an old grape vine. Years ago when I first moved on to Green's Fruit Farm I attempted to graft grape vines. I found it a difficult operation with which but few could meet with success. Not one of the ten grafts which I inserted grew. Therefore I wasted much time when I attempted to graft grapes. I have often told how to graft the grape. The method is similar to other grafting, but the joint must be carefully made, held in place firmly, and the juncture must be buried under the soil.

Wealth is a weak anchor; and glory cannot support a man; this is the law of God, that virtue only is firm, and cannot be shaken by a tempest.—Pythagoras.

### Fruit and Milk House.

Green's Fruit Grower:—I would like to see plans in your paper for a small fruit house, say 12 x 20, with a partition so one end could be used for a milk house. I have level ground and clay subsoil and could not go into the ground more than 18 inches. I would like to hear from some of the readers of the Fruit Grower who have such houses that are giving satisfaction and that keep out frost in 20 degrees below zero weather. I should also like to see in Green's Fruit Grower, barn plans for a small suburban place with room for 2 horses, 4 cows, 2 sows and pigs; also room for feed; cement floors and gutters, and place for saving liquid as well as solid manure.—W. T. Webb, Indiana.

Editor's Note: Will some of our readers kindly write out plans for the above two buildings as briefly as possible. The small fruit house will be desirable as a summer cold room. Especially will this be the case if the cold storage house is built over a spring brook. The spring brook running through the building will tend to keep it warm in winter and cool in summer. The cans of milk and cream could stand in the water of the running brook in summer. But the building need not of necessity be built over a brook. The building need not be entirely frost-proof but should be very nearly so. If the apples are stored in boxes or barrels the fruit would not be injured by a few degrees below freezing.

Almost anyone can get up a design for this small cold storage house or frost-proof building. All that is necessary is

to have plenty of air spaces one inch to four inches in width. Each air space should be as completely isolated as possible by boarding up over thick building paper, provided the building is erected of wood, which is the cheapest material. If the building is built of brick, an air space of three or four inches should be retained between the courses of brick, and then at least four more air spaces will be needed inside of the brick wall. Almost any carpenter can tell you how to construct such a building as this and how to arrange the air spaces, which prevent the entrance of frost. We have a large building of this kind at Green's Fruit Farm. We have ventilator doors 18 inches square on both sides at the base of the building, and ventilating windows at the top of the building, which enable us to ventilate at any time desired.

### An Unlucky Challenge.

A student had been bragging of his various accomplishments, until one of the company, losing his patience, said:

"Now, we have heard quite enough of what you can do; just tell us what you can't do, and I'll undertake to do it myself."

"Indeed; well, I can't pay my bill, and am very glad to find that you can do it," replied the student.

Amid the hilarity of the company the guest redeemed his rash promise.—Tit-Bits.

It is not so much the variety of apples that is grown, but the way they are produced, packed and sold that makes money.



## The Florida Fruit Grower Gets His Start This Way

Here's a picture of W. T. Bethea's trunk and grapefruit trees near Wauchula, Florida. The vegetables growing between the tree rows have averaged \$1718.51 every year for the last seven years.

Plenty of instances of this kind prove we're right when we say that a man can make a comfortable living while waiting for the citrus trees to mature. And the demonstrated returns from a grove of orange and grapefruit trees vary from \$3,000 to \$10,000 a year.

## SEND US YOUR NAME!

We'll Tell You of A Proved Method of Making \$3,000 to \$10,000 A Year

\$3,000, \$5,000, \$8,000 and \$10,000 a year are incomes worth trying for. Send us your name if you'd like to make that much. We'll tell you how. We'll give you the names of men right here in the region near Wauchula, known as the Wauchula District. You can read the letters of these men telling what they're making and the way they do it.

Most of them will say it's the Wauchula Combination Soil. You know about how some Florida soil grows fine vegetables. And other Florida soil produces high grade oranges and grapefruit. WELL HERE'S A SOIL THAT GROWS BOTH! Wauchula Combination Soil has proved its right to the name thousands of times in the last twenty years.

Men here put out the grapefruit and orange trees, then they plant vegetables between the tree rows. They don't have to spend all their hard-earned savings on living expenses while waiting for the trees to mature. WAUCHULA COMBINATION SOIL PAYS FOR ITSELF. The three and four crops a year from vegetables pay for the land and give you a good living until your grapefruit and orange trees speed F-O-R-T-U-N-E.

People ask, "Why wasn't this land all taken up long ago if it's so good?" Because until a little over a year ago this tract wasn't on the market! When you write us we'll tell you about the 28,000 acre search that was made by an old land expert for land that could be marketed under a guarantee. And we'll tell you, too, how we managed to have it placed on the market.

## These Men Are No Smarter Than You--- Wauchula Combination Soil Made Their Fortunes

Read some of these records. You can do as these men are doing if you want to. T. S. Gidding cleared \$641.56 from 1-acre of house. \$500 approximately is what G. S. Carlton got for an acre of beans. One grapefruit tree in one season earned over \$400 for Mike Cowart. E. F. Bestick's returns for the season of 1912-1913 were \$4,471.52 for 3.51 boxes of fruit. A voucher made as high as \$1,599.52 from one acre of cucumbers. John Burnett sold a full crop of string beans from 21 acres for \$722.00. W. L. Warren is getting \$1,200 to \$1,500 every year from his one best acre of grapefruit—no less eighteen in all. J. G. Durran averaged \$500 an acre from 4 acres of oranges for 12 years. Some men will make, conservatively, between \$5000 and \$6000 from this year's oranges and grapefruit. There are scores more like these—we'll tell you about them—and how you can get the same profits.

### Here's the Place to Write Your Name

And your name and address bring all the facts about how you can live well from the start at Wauchula—how you'll soon be making \$3,000 to \$8,000 a year—more if you care to. Get these facts. It doesn't cost anything to "find out." We want you to come to Wauchula, talk to grove owners, pick oranges and grapefruit from the trees. But in the meantime write us. We'll send complete information—moderate prices, easy terms (a small amount down and a little every month). NOW mail your request. Letter, postal or this coupon will do.

**WAUCHULA DEVELOPMENT CO.**  
Box 161 Wauchula, Florida

Please send me actual facts regarding your combination vegetable and citrus fruit land. Also prices, terms, bankers' guarantee, letters from  
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### Taking Cold.

Some persons have a faculty for "taking cold," yet it does not always indicate delicacy of constitution. "Taking cold," simply means that the body has too low a temperature; the balance is disturbed; heat-production is not equal to the expenditure of heat; cold drafts of air, wet clothes, damp beds, bathing too long continued, cause a loss of heat greater than the system can supply at that time; hence occurs the chill. The remedy is to increase heat-production. If the clothes are wet, change at once for dry ones; if feet or hands are cold, use friction; if the system is chilled, warm fluids, like tea or coffee, or herb drinks, assist the body in giving out heat; exercise is very important.

### Breathe Through Your Nose.

Teachers of physical culture insist that their pupils shall keep the mouth closed during all physical exercises. Every athlete will vouch for it that he keeps his wind longer by breathing through his nose. Just as soon as he begins to breathe through the open mouth he loses ground. His mouth becomes dry and parched, and a sharp pain in his chest soon forces him to desist the exercise.

"Breathe through the nose," is a maxim which cannot be too often repeated or too emphatically repeated. As a well-known man once said, "Keep your mouth closed when asleep and at all other times when not necessary for the purposes of eating, drinking or talking."

### Hot Water For Headache.

"There would be less indigestion and fewer sick headaches," said a London doctor, "if people would stick to the hot water cure. The first dose should be taken half an hour before breakfast. This cleanses the alimentary canal and leaves it ready to digest the breakfast. If you don't care to eat fruit for that meal, squeeze half a lemon in the water, and that will give you the requisite acid. "Most sick headaches will disappear before copious drafts of hot water. If you wake up with a headache, take a tumblerful of hot water and go back to sleep, and you are almost sure to wake up feeling all right. The water should be freshly boiled."

### Neuralgia and Toothache.

Neuralgia and toothache often make their appearance in winter. They may be caused by defective teeth in the first instance, exposure to a cold wind and damp making pain apparent. In this case it is necessary to consult a good dentist. Temporary relief can often be obtained by hot fomentations, or a little camphorated chloroform may be rubbed along the gum to ease the toothache. Neuralgic toothache may be checked by a few doses of quinine. It is usually due primarily to a person having "run down" in health. Exposure to cold or damp or an attack of indigestion will often bring on a neuralgic attack. Those who are liable to the complaint must live regularly on good, plain and nourishing food.

Strictly, food in the stomach is still outside the body, although it is capable of causing a great deal of discomfort and pain. Taking too much of even the plainest and most wholesome food throws unnecessary work upon the digestive and eliminative organs, and if the practice is continued for any length of time it must lead to dyspepsia, if not to some more

serious disorder. We wonder how many people wait for natural hunger before partaking of their food. When a man is really hungry, his digestive organs are almost always prepared to deal with the food which he takes, provided that it is reasonably wholesome and properly masticated. If the quantity of food were limited to the real requirements of the body, and if people would now and again skip a meal when they are not actually hungry, they would not only enjoy plain food better, but also escape much of the stomachic disturbances from which they are prone to suffer. The best sauce, by the way, for either breakfast or dinner, is exercise in the fresh air, which always brings a natural desire for food.—Good Health.

### The Sleep Mystery.

One of the most modern of scientists has explained sleep in this way, says Dr. Boris Sidis: "Sleep is not a disease, nor a pathological process due to the accumulation of toxic products in the brain or in the system generally. Sleep is not an abnormal condition, it is a normal state. Like the waking states, sleep states are part and parcel of the life existence of the individual. Waking and sleeping are intimately related—they are two different manifestations of one and the same life-process—one is as normal and healthy as the other. One cannot help agreeing with Clapere's biological view that sleep is a positive function of the organism; that sleep belongs to the fundamental instincts. As Clapere forcibly puts it: 'Sleep is a protective function, an instinct having for end, in striking the animal with inertia, to prevent it from arriving at a condition of exhaustion. We sleep, not because we are poisoned or exhausted, but so that we shall be neither poisoned nor exhausted.'"

This may not tell us much more than we knew before, but it at least explains to us the fact that sleep is a problem that the scientists consider well worth the fullest examination and discussion.

### How to Keep Well.

The first law in this testament of health is to look after the body in a rational way. In order to do this, divide the day reasonably between labor and recreation, eat wholesome food, observe all rules of cleanliness and live in a dry, sunny, well-ventilated house. As to the hours of work, the professor advises no one to labor at any occupation, either mental or physical, more than eight hours a day. This will give you eight hours for recreation, exercise and self-improvement. His ideal plan for utilizing the eight hours from work is to count two hours for the three meals of the day, two hours for art and reading, two for family intercourse, and two hours for some exercise or sport—walking, climbing, riding, rowing, swimming or gymnastics.

In the matter of food the professor is not explicit as to what to eat or what not to eat. His main rule is that no one should consume more than a pint of food and drink at each of the three meals. Anything more than this, he says, overloads the stomach. He does not declare absolutely that you must not drink tea, coffee, and alcoholic beverages. He says you must not be a slave to them. These beverages have no nutritive value, but through the usages of generations they have become almost necessities and are not easily replaced. They are all poisonous, but through customary use they have lost some of their dangers. "But," adds this authority, "by injudicious use of them you shorten your life." In the matter of baths, Professor Czerny is equally explicit. From childhood up it is essential to health that one be clean. Have at least a sponge bath with cold water every day. Clean the teeth twice a day. Take a hot bath once a day.

### Some Apple Epigrams.

The apple is an asset, financially, morally and politically.  
The apple is the aristocrat of foods and the best medicine.  
Apple orchards are better nurseries of citizenship than the deck of battleships or military camps.  
The man in the orchard is always a good citizen.  
Horticulture is a science, not a guess.  
The apple barrel is nature's medicine chest.  
Apples are an antidote for drink and tobacco.  
Apples carry the pure food stamps of the great physician.  
The road that leads to the orchard is the pathway to a simple, happy, prosperous life.—Denver News.

Mrs. Lansing—"Our Aid Society is going to give a church social at the church."  
Lansing—"Another? Why, you just had one last week."

Mrs. Lansing—"I know. It didn't pay expenses, so we're giving another to make up the deficit of the last one."—Lippincott's.

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### Spraying Apples and Peaches.

There are four essentials in spraying: Thoroughness of work; doing the work at the proper time; an outfit capable of doing good work; the right kind and strength of material or spray solution, says C. W. Strickland in The Practical Farmer.

Any spraying worth doing is worth doing well, and to do it well no one of these four essentials can be neglected. It would be difficult to say which is the most important; all are essential to success in spraying. Thoroughness, absolute thoroughness, is an ideal to which we may aspire but seldom attain. However, it is easily possible to do good work by using care, watching the sprayed trees carefully for missed places and working systematically. Thoroughness is important. Guesswork will not do.

For ordinary work 25 to 30 feet of hose is not too much; and 80 pounds pressure is low enough. A good barrel pump will give that easily. One should avoid a topheavy pump, one that has leather valves or that does not have brass working parts. The Eclipse barrel pump is one of the best. The Gould people make good ones, too. Of course, there are many other good pumps. The nozzle is an important part of the outfit. The Vermorel type is perhaps the best for general purposes, the newer kinds throwing a conical, whirling mist spray and having no projections to catch on limbs. A 45-degree elbow between the extension rod and the nozzle is necessary for some work, especially for the first application for codling moth. An extension rod is essential; it is made preferably of bamboo (lined with a tube, of course) and should be 8 or 10 feet long, the longer length for large trees. With such a rod most of the spraying can be done from the ground.

Different solutions are used for different purposes in spraying, but in each case the solution must meet certain requirements.

One should use the standard, tested mixtures and prepare them according to directions. It is not within the province of an article such as this to describe in detail the methods of preparing the different spray solutions. Experiment station bulletins and publications of the National Department of Agriculture cover the ground fully. If rain comes before the solution has dried it will probably wash it all or nearly all off. If the solution has dried before the rain comes, it is not necessary to do the work over. In spraying for scale, the problem is much the same in both peach and apple orchards. The idea is to apply a solution which will penetrate through or under the wax covering which protects the delicate body of the insect and kill the scale. Lime-sulphur solution does this by virtue of its causticity; the oil mixtures do it by reason of their penetrating properties. Men have not agreed as to which is best to use. The aim should be to cover on all sides all the twigs and branches. Good results cannot be expected from spraying merely one-half or two-thirds of the surface of the bark. It is a very good plan in spraying for scale, to spray "with the wind." That is, to not attempt to cover both sides of the tree the same day, but only the windward side, while a light wind is blowing. In this way the wind carries the spray through the tree so that when the wind is in the opposite direction the other side may be sprayed. Ordinarily this method results in much more thorough work, probably requires less solution and is very much more pleasant than when one tries to spray both sides though the wind be slight. Of course, in calm weather (which is rare in some localities, especially in spring) and in treating small trees these statements are not so applicable. Spraying for scale should not be neglected if scale be present; but the application should be made even if the trees are free from scale, for its beneficial effect on the general health of the trees.

It is not always convenient for the farmer to do summer spraying. Hence it is necessary that the number of applications be reduced to those that are most essential and yet be sufficient to give good results. For the apple, two thorough applications should give very satisfactory results, though three are better. Three are usually advised for the peach. For summer spraying the apple a combined spray is used, an insecticide and fungicide; thus preventing diseases at the same time as it poisons the codling moth and other biting insects. Bordeaux mixture was formerly the standard fungicide for the apple, but lime-sulphur has superseded it to a considerable extent. Commercial lime-sulphur solution diluted 1 to 40, combined with arsenate of lead in the proportion of 2 pounds to 50 gallons, has given good results in many localities. In spraying Winesap apples the past season, the writer used the lime-sulphur solution and secured 90 per cent. of perfect fruit, with one per cent. wormy and 2 per cent. bitter rot; while the apples not sprayed ran 29 per cent. perfect, 54 per cent. wormy and considerable bitter rot. Over half the unsprayed apples dropped prematurely, while hardly any of the sprayed apples dropped before picking time. Three ap-

plications were given. The crop was much larger from the sprayed trees.

It is frequently recommended to give three applications, as follows: 1. Within ten days after the falling of the petals, for codling moth and diseases. 2. Two weeks after the petals fall. 3. About the first of July, for second brood of codling moth and bitter rot and other diseases. If the first application is made thoroughly the second may be omitted and good results obtained nevertheless. The first and third, however, are both important, the third especially in the South where bitter rot and other diseases and the late brood of codling moth are serious factors. The first application is the most important one and special effort should be made to put it on thoroughly and before the blossom ends of the apples close, which occurs usually within ten days after the blossoms fall. The reason is that the majority of the codling moth larvae enter the apple by way of the calyx or blossom end. The aim is to get some of the poisonous solution in each calyx, so that the larvae may be killed before harming the fruit. Naturally this cannot be done after the closing of the calyxes. When it is done it furnishes probably continuous protection at that point through the season. Since most of the young apples point upward at this time it is necessary to direct the spray downward in order to force it into the calyxes. This may be accomplished by means of the 45-degree elbow at the end of the extension rod, as mentioned before.

In applying the spray one should work systematically; he should begin at one side of the tree and cover it thoroughly as he goes, branch by branch; thus he will be less liable to miss parts of the tree. The inside branches should be sprayed as well as the outside ones. The operator should finish spraying about the time dripping begins, taking care, nevertheless, to do the work thoroughly. While getting the spray down into the calyxes the leaves and young fruit will be well covered.

In the other applications the aim is to cover the fruit and leaves with a fine spray, and to stop when dripping begins. These later applications require less of time and solution than does the first. The first and third are the important ones. Experience alone can teach one how to manipulate the rod, but a great deal of help may be obtained from farm papers and bulletins. The treatment for apples is suitable for peaches also. Summer spraying of peaches has not been worked out to the extent that spraying apples has been, but very good results have been secured by the use of the self-boiled lime-sulphur solution with arsenate of lead. The principal troubles to be overcome are curculio (which causes wormy peaches), peach scab (freckles), and brown rot. More or less foliage injury may result from the use of the arsenical poisons. It is well not to put on the spray too heavily; stop before the leaves begin to drip. There is a farmers' bulletin which gives the best and most complete information about the preparation and use of the self-boiled lime-sulphur solution.

Three applications are advised, about as follows: 1. When the calyxes or "shucks" are falling from the young peaches, using two pounds each of lime and arsenate of lead to 50 gallons of water. This is to prevent curculio damage. 2. About two weeks after the first, using self-boiled lime-sulphur, 8-8-50 (8 pounds each of lime and sulphur to 50 gallons of water), and it is recommended to add two pounds of lead arsenate to kill late appearing curculio; this is to prevent peach scab, or "freckles" as well as brown rot. 3. About one week before the fruit ripens, using the self-boiled lime-sulphur alone; this is the principal treatment for brown rot.

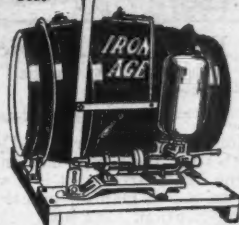
The third treatment should not be given very early varieties. For very late varieties a fourth application may be made similar to the third about four weeks before the fruit ripens, putting on the third about four weeks after the second. If it is possible to give only one treatment, the second should be used. Plums may be given the same treatment as peaches with good results.

In conclusion, every grower should leave a check unsprayed, for comparison.—Maryland.

### Apple Culture.

Reply to Arthur Royer, Ills: If I could have my choice of two fields I would not select the one on which an old orchard had stood, as a site for a new orchard. But if necessity urged me to plant a new orchard on the land where an old orchard had stood, I would plant it there, but I would feel the necessity of giving the young trees planted on the site of the old orchard extra good care and attention in the way of cultivation and enriching the soil, owing to the fact that the trees which have stood upon that soil for so many years have taken up much of the fertility that these trees demand. But on most farms there is no necessity of choosing the site of an old orchard for a new orchard, either of apples, peaches, pears, plums or other fruits.

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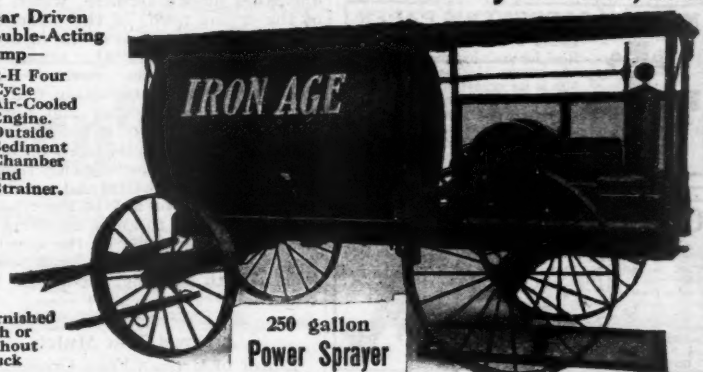
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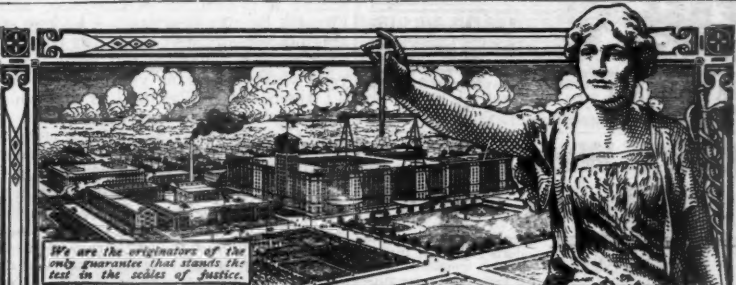
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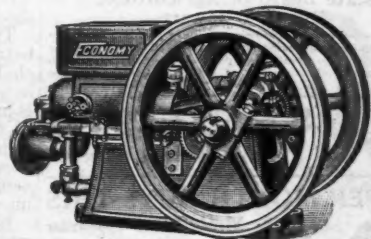
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**Letters From the People.**  
"Prudent questioning is the half of knowledge.—Proverb."

Appreciation. Charles A. Green:—Dear Editor, I wish to express appreciation of your paper the Fruit Grower, it is a welcome visitor to me—a helpful, practical, instructive publication. Its high moral tone is commendable and makes its influence for good felt to those who read it from month to month.—Tyler B. Jenks, Mass.

#### St. Louis, Mo. Letter.

Mr. Chas. A. Green:—There is always a copy of your Fruit Grower on file at our Central Library and they keep it in a case made for it and every time a new issue arrives, they lay away the back number and bind them into books and place in library. They don't do that with all their magazines, but those that are interesting and too good to cast away. This library covers a square and all granite, a gift from Andrew Carnegie. Your magazine is not only instructive, but contains spice and many things nice.—A Subscriber.

#### Co-operation Among Farmers.

Editor Green's Fruit Grower: Keep on publishing the glad tidings of co-operation among farmers, which is one of the crying needs of the present. We ought to have organizations in order to hold our own against other organizations that are pressing us. Farmers all over this glorious land, mountain and plane, ought to band together and buy, sell, manufacture their own machinery, etc. Also unite with a solid front on all political candidates, selecting only those who will pledge a square deal and equal opportunity. If you or any of the readers of your paper wish to know anything about these vales and hills of the everlasting mountains I will do what I can to inform them. With greeting, Joseph A. White. Utah.

#### A Novel Tree Mulch.

Editor of Green's Fruit Grower:—Last May, a friend called and wanted me to accept a present of a Lawrence and a Flemish Beauty pear tree. I had no suitable place ready, not intending to set any pear trees last spring, but went into my yard where I raise my young chickens and set them out. The land is not what I would select for pears, being rather dry. I set them carefully and after setting and putting some coarse manure on top as usual, I had some thirty old rotten fertilizer bags, so I spread about fifteen of these bags around each tree, placing some stones on them to keep them from blowing away or chickens scratching them off. Although in a short time the two solid months of drouth came on, these trees made splendid growth, while my friend who watered his every few days, lost every one. I did nothing further to mine after putting the bags around.—J. H. Barker, N. H.

#### Fruit Barriers.

Editor of Green's Fruit Grower:—Economists used to say, "People are separated by rivers, mountains, seas and mutual dread." One by one, these barriers have been conquered. Witness some notable examples, the Suez Canal, the St. Gothard Tunnel, the Simplon Tunnel, the Brooklyn Bridge, the Panama Canal. The conquest of each one marked a distinct advance in civilization and human welfare. Note also the names of Watt, Fulton, Morse, Bell, Marconi, Wright and Goethals,—barrier-removers, all!

The greatest barrier of all, a barrier infinitely more wasteful of human energy and time, than a trip around the Horn, or a detour of the Alps, still remains to hamper progress and impose a burden, needless and heavy upon mankind. Stranger still, this barrier was not even recognized as such by our leading men,—hence, they passed it by and attacked the lesser ones.

This big barrier stands mountain-like between the producer and the consumer, challenging another Fulton or Marconi to action! Burleson, favored by the Fates, is in a position to demolish it with a stroke of the pen! This conquest, unlike the others will require no vast treasure nor sacrifice of life, nevertheless the task will demand the courage of a Wright and the unconquerable perseverance of an Edison! What is the barrier? Let me illustrate my personal experiences. I have an orange grove in Florida and a cherry orchard in Michigan. The barriers between me and the consumer are the same whether in the North or the South. They are not peculiar to fruit growers either but are common to all producers, hence the or-

ange will serve as a true type for illustration.

When this fruit commands \$1.00 a case in Florida, my northern friends must pay \$5 or \$6 a case. In other words, it costs four or five times more to carry an orange over the barrier than it does to produce it. This absurd and unnatural condition, due to a marketing system, inordinately expensive and inefficient, constitutes a barrier much more wasteful of human energy and time than a trip around the Horn; the Alps are a mere ant hill in comparison!

Burleson can demolish this barrier! How? Simply by raising the parcel post weight limit to 100 pounds and lowering the tariff to an actual cost basis; establishing a rate of 50 cents a case on oranges from Florida to New York, Chicago, and intermediate points, with C. O. D. privileges included, and a similar rate for all other products. This would enable the producer to deal directly with the consumer and hereby eliminate the barrier. Then the consumer would pay \$1.50 instead of \$6 a case for oranges, and for all other foods in proportion.—P. S. Green, Ind.

#### The Rhode Island Greening.

Dear Mr. Green:—I have read every number of Green's Fruit Grower for about 25 years. I consider it the best paper printed on fruit growing. I read with interest the account of the original Greening apple tree. Last August my family and I took a wagon ride some forty or fifty miles to visit a friend that has purchased a farm on Mt. Hygeia, adjoining Mr. Drown's. I called on Mr. Drown for the purpose of seeing the old apple tree, but was disappointed to learn from him, that the old tree blew down and is entirely a thing of the past. I saw a very pretty bed of portulacas growing where it stood. Speaking of the change in the Greening apple, it is more in the position and cultivation than anything else. I have Greening's growing in plowed land, large and green, while other trees in sod are just as large, lighter in color, with a deep blush on one side. The latter are of very high flavor, will keep in a common cellar and retain their flavor until April.—Walter A. Cheney, Mass.

#### Cannot Grade Apples.

Green's Fruit Grower:—Living as I do in the middle west, I am watching with some concern the invasion of the beautiful high priced western apples. I say invasion, because this territory once belonged to the Michigan and New York orchardist. Now everyone knows that the west cannot produce an apple equal to the tender, juicy, spicy Spy or King, but if Eastern orchardists don't look more carefully after their fruit, the Westerners will wipe them entirely off the map.

Last week—the week before Thanksgiving—I purchased a barrel of Spies, paying \$6. The top layer were finely colored and average size, but from there down deteriorated rapidly. My grocer agreed to take back the lower half of the barrel. Of the upper half, one-half bushel were sound, one-half peck entirely rotten, about the same amount partially so, and the remainder wormy, crooked, or specked—generally unfit for market. Now I am not alone in this experience, nor is this year an exception. I usually do get several barrels of good fruit after more or less fuss and ill feeling.

The fact is, some dishonest growers are giving a bad name to the Eastern apple. Why shouldn't the law require every grower to put his name on or in the barrels or boxes? If he wishes to be a thief and liar, let him bear the reputation. As it is, the cheat and the railroads get the profits, while the honest shipper and the consumer bears the loss. What is the remedy?—Mrs. M. H. Williams, Iowa.

#### The Moon's Influence.

Editor of Green's Fruit Grower:—We do not believe your comments in the November Fruit Grower on the moon's influence on vegetation, in reply to a correspondent, will be endorsed by a large number of your farmer readers who, like myself, have reached from actual experiment a contrary conclusion. You say, you cannot see how an opaque body like the moon, 240,000 miles distant, can exert any influence on crops, but neither probably can you explain how this same body influences the sea and causes the tides, which no one questions. Isn't it reasonable to suppose that the same influence may affect vegetation? A large majority of farmers of my acquaintance believe that it does, and are governed by the moon's phases, as far as practicable, in putting in their crops. For myself, apart from actual experiment, I would much sooner accept this theory than that of locating water underground with a forked stick, which is now receiving the endorsement of scientific men.—H. W. Mo.

From today you must bring to bear an ever-increasing wisdom—the application of lessons learned. Every incident of your daily toil should be made an educational incident.—Henry M. Bylesby.

## CLASSIFIED ADVERTISEMENTS

No display advertising will be placed in this department and no type larger than 6-point. The first three words only to be printed in capital letters. Each abbreviation and number will count as one word. Rate 10 cents per word for each insertion. No advertisement inserted for less than \$1 per issue. We cannot afford to do any book-keeping at this rate. Cash must accompany every order. Orders must reach us not later than the 15th of the month previous to the month in which the advertisement is to appear.

Terms: **CASH WITH ORDER.**  
Green's Fruit Grower Co., Rochester, N. Y.

### HELP WANTED

**WANTED**—A woman who has a little spare time and needs to earn money. Write to the MacMaster Specialty Co., Syracuse, N. Y.

**AGENTS**—Novelty knives and razors are lightning sellers. 100% profit. Exclusive territory. Goods guaranteed. Novelty Cutlery Co., 154 Bar St., Canton, O.

**MEN AND WOMEN WANTED** for government jobs. \$65 to \$150 month. Vacations, Steady Work. Parcel Post and Income Tax mean many vacancies. Common education sufficient. "Pal." unnecessary. Write immediately for free list of positions now available. Franklin Institute, Dep't C 147, Rochester, N. Y.

### MALE HELP WANTED

**WANTED**: An up to date farmer to go South and take over a fine farm of about forty tillable acres. Fruit orchards and modern improvements. Great climate and best of markets. It is station close by. Must meet own expense. J. D., Room 706, 205 Broadway, New York.

**LOCAL REPRESENTATIVE WANTED**. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. All or spare time only. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. National Co-Operative Realty Company, L-638, Marden Building, Washington, D. C.

### FARMS WANTED

**WANTED**—Improved farms and wild land! Best system for quick results. Full particulars and magazine free. Don't pay big commissions. Western Sales Agency, Minneapolis, Minn.

**FARMS WANTED**. We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 32 Palace Bldg., Minneapolis, Minn.

**CASH FOR YOUR FARM**. I bring buyers and sellers together. If you want to buy, sell or exchange any kind of property or business anywhere write me. Established 1881. Frank P. Cleveland, 2855 Adams Express Building, Chicago, Illinois.

### COLD STORAGE

**COLD STORAGE** for fruit. The Cooper Brine System using ice and salt. Superior results over other methods. Reasonable cost and safety. Madison Cooper Co., 110 Court, Calcium, N. Y.

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**BULBS**. Gladioli bulbs, finest. Prices low. Beck & Beck, Piqua, O.

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**FOR SALE**—Cumberland raspberry plants, \$5.50 per thousand. Silver Spangle! Hamburg cockerels \$1.00 each. S. H. Graybill, Richfield, Penna.

**WELL LOCATED** New York Farms at right prices, in fruit section. General stores doing good business. D. B. Lown, Canandaigua, New York.

### FARMS FOR SALE

**40 ACRES**; improved; concrete road; fruit. Will exchange for city property. Mary Hango, Charlotte Hall, Maryland.

**FERTILE FARMS**—Beautiful Perkiomen Valley, near Philadelphia; Fruit, poultry, truck. Catalog. W. M. Stevens, Perkasie, Pa.

**200 ACRE ORCHARD**, highest cultivation. 15,000 trees, four years planted. Near Trenton. Price \$30,000; or will lease. Ridgely, Hopewell, N. J.

**NEW JERSEY FARMS** Between Philadelphia and New York. Profitable Fruit, Truck, Potato, Stock, Dairy and Poultry Farms. List free. A. Warren Dresser, Burlington, New Jersey.

**SEVERAL GOOD** fruit and truck farms for sale, near the Main line of C. & O. R. R. in Fayette Co., W. Va., ranging from \$25 to \$50 Per acre. J. W. Rogers, R F D 1, Fayetteville, W. Va.

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**SELL YOUR PROPERTY** quickly for cash, no matter where located, particulars free. Real Estate Salesman Co., Dept. 22, Lincoln, Neb.

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**IDEAS WANTED**—Manufacturers are writing for patents procured through me. 3 books with 1000 inventions wanted sent free. Advice Free. I get patent or no fee. R. B. Owen, 50 Owen Bldg., Washington, D. C.

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## AUNT HANNA'S REPLIES

Dear Aunt Hanna:—This is my first attempt at writing to you, but I need a little friendly advice so thought I would write to you. I am a young motherless girl. I am keeping house for my father, brother and a sister. Here was where I wanted your advice. I have kept steady company with a very nice young man for nearly a year. He asked me to leave my present home to go with him as his life-mate. I didn't think it wise or best to leave home now for a year or more. He is willing to wait that long. Did I do right? He gave me a lovely ring for my birthday. I don't think I ought to accept it, or any other jewelry before I become engaged, and I don't consider myself bound in any way, so is it right that I accept any jewelry? He was away from me for a considerable long time and only wrote once in a great while. Is it right that I should rebuke him for his neglect? If he pays attention to other girls have I a right to mention this to him?—Troubled.

Aunt Hanna's Reply: I think you did well to postpone your marriage on account of your father partially and for the further reason that you are yet young and will know your mind better after a little delay.

As regards rebuking your lover for not writing oftener, my opinion is that if any rebuke is given it should be in the mildest manner and simply a suggestion. It seems almost impossible for some people to write letters. Those who write easily and naturally seldom realize how difficult it may be for others to do the same work. I suggest that girls like yourself be lenient to the young man who pays some attention to other girls. Do not make him feel that he is tied to you with a rope.

Some fathers are selfish and unjust in requiring that the daughter, who has taken the place of her dead mother in the family, shall reject offers of marriage in order that she may be retained in the house as the caretaker. I know of an instance of this kind where the widowed father demanded that the daughter should not accept the proposal of marriage which seemed to her to be desirable. This self-sacrificing woman has now reached an age when it is not likely that she will have an offer of marriage. Fathers should be considered under such circumstances as I have referred to, but they should not be allowed to override all sense of propriety or justice as did the widowed father I allude to.

### Shall I Marry Now or Wait?

Dear Aunt Hanna:—I am a young man twenty years old and am engaged to a young lady eighteen years old. I think I love her and I think she loves me. We have been going together for over two years. I have been in school both winters and would like to remain in school a few years. Do you think I should put this important matter off several years in order to get a better education? We expect to live on the farm and make that our home. Do you think I should ask her to wait? I am neither rich nor poor, but think I will have a good chance on my father's farm.—Reader.

Aunt Hanna's Reply: I advise you to delay your marriage. I suspect that some good friend of yours has given you this advice already. A boy is young when 20 years of age, and has much to learn. At that age he has not found himself, that is, I mean that he has not discovered or recognized his strength or what kind of work he is qualified for, or whether he is adapted for big things in the way of enterprises, or whether he must be satisfied with small affairs.

Remember that the years of courtship are the happiest years of any man or woman. Talk this matter over plainly with the girl you love.

### Buying a Farm and Getting Married.

Dear Aunt Hanna:—I am a young man thirty years of age, but am not engaged yet and have no one to support but myself. I am working on a farm at my home but am thinking of buying a farm of eighty acres. There is a good big barn on this place, but the dwelling house is poor. The land is good and can be bought for \$35.00 an acre. I can pay \$2000 down on it. Would you advise me to buy it? The place is situated in a negro neighborhood. I would like your honest advice as to what to do, to get married and buy the farm, or buy the farm and wait until I find a more suitable helpmate. This girl said she was raised on a farm, but I don't know her so very well or any of her people. Don't you think it would be better for me to buy the farm and batch for awhile until I find a helpmate that I am sure will make good, or do you think this girl will be all right as a helpmate?

I was born and raised on a farm and have been on a farm all my life with the exception of four years when I was working for a gas company.—H. G. P.

Aunt Hanna's Reply: I do not feel that it would be advisable for me to give advice concerning real estate. There are so many things to be taken into consideration that the advice to be of value should be given by some one who not only has seen the farm in question and other farms in the neighborhood, but one who is acquainted with the man who is to manage the farm. It would be well for you to consult some of the successful farmers who know you and are located near the farm you think of purchasing.

As to marrying, I should advise you to wait until you are sure you have found the right girl.

### Luke McLuke's Jibes.

Cincinnati Enquirer.

Thin skirts show which way the wind blows.

A man may change his plan of life, but he won't change his brand of booze.

When two women bury the hatchet one of them is always digging it up to see if it is still there.

The honest working girl claims she should receive a man's wages. Well, why doesn't she get married?

Every married woman knocks her husband at home and brags about him in public.

What has become of the old-fashioned girl who used to have her waistband filled with pins?

Father wants to slap the children because they don't take castor oil. But when he has to take it he makes the war in the Balkans look like a pink tea.

A strong-minded woman is one who doesn't care whether her hat is on straight or not.

A cross-eyed man won't try to make googoo eyes at the girls, but a girl who stutters will gossip as much as any other girl.

The fool men don't know it, but there are more married women boosting their husbands than there are knocking them.

One reason why a woman is superior to a man is because it takes her 39 years to reach the age of 26.

Grandma used to be an old lady who would throw a shawl over her shoulders and sit in a rocker and knit stockings all day. But nowadays she puts on a nickel's worth of prepared chalk, a straight front and a tight hobble, and follows the crowd.

### Waste in Our Lives.

In every well regulated nation, state or home, it is right to compare income with expenditures, and to balance both if possible. For, if more is spent than what is earned, there soon must follow suffering and misery, says Post Express.

I have here before me some cold and stubborn figures which we cannot brush away, as they come from a reliable source, viz., from our government report at the end of the fiscal year, July 1st. And what a sad tale it tells us! For the twelve months just passed, the American man has consumed 64,500,000 barrels of beer; this is about 32 billion glasses of beer poured down our thirsty throats at a cost, say of \$1,612,500,000. This would have paid the national debt and left us nearly \$600,000,000 for pocket money.

And whiskey? We drank 143,300,000 gallons of spirits in twelve months. At 10 cents a glass would our liquor bill not come to \$859,800,000 for the year? This is twice as much for whiskey as for our bread in the year, and four times as much for beer as for bread. What is our bill for tobacco, I mean for cigars, plugs and snuff? \$416,000,000. And all our women's clothing is only \$384,752,000; our sugar bill \$279,249,000, and our butter, cheese and milk bill, \$274,558,000. Just 7,707,000,000 cigars smoked in twelve months and more than 16 billion cigarettes!

Our soda waters cost \$320,000,000 a year, as much as our leather.—Our candy bill, \$134,000,000, costs 10 millions more than our bill for paint and varnish.

### His Verse.

A little boy who had reached the age when boys feel that a watch is the one thing that makes life worth living, was told that for the present a watch could not be given to him.

But the boy continued to tease for one, until the whole family was wearied. Then his father, after explaining that he should certainly have a watch when he was older, forbade him to mention the subject again.

The next Sunday, the children, as was their custom, repeated Bible verses at the breakfast-table. When it was Edward's turn, he astonished them all by saying:

"What I say unto you, I say unto all: Watch!"—The Youth's Companion.

October 29, 1913.

I want to say that Green's Fruit Grower is the best little monthly paper that comes into my office or home.—Chas. Burd, Massillon, Ohio.

## One Barrel of "Scalecide" Will Spray as many Trees as Three Barrels of Lime Sulfur



"Scalecide" has greater invigorating effect on your orchard—kills more scale, eggs and larvae of insects with half the labor to apply. We can back up this statement with facts concerning the Good Results from Using

### "SCALECIDE"

Send for our illustrated booklet—"Proof of The Pudding". Tells how "Scalecide" will positively destroy San Jose and Cottony Maple Scale, Pear Psylla, Leaf Roller, etc., without injury to the trees. Write today for this FREE book and also our booklet—"Spraying Simplified". Our Service Department can furnish everything you need for the orchard at prices which save you money. Tell us your needs. We are World Distributors for VRELAND'S "ELECTRO" SPRAY CHEMICALS and Arsenate of Lead Powder (33 per cent), which, used wet or dry, has no equal in strength or texture. Avoid imitations. B. G. PRATT CO., Mfg. Chemists Dept. F 50 Church Street, New York City

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"As well made as can be." Length over all 11½ inches. Shank-drop forged steel ½ in. square. Blade, 3½ in. long, 2 in. wide; made from Knife Steel and properly tempered. Finish-polished, and blued. The inside of the point is scored, permitting the tool to be hung on a limb or projection without fear of falling.

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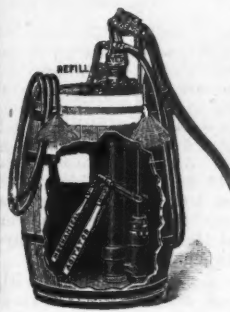
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## SEASONABLE SUPPLIES



### The O. K. Cog Gear Barrel Spray Pump

The special features are the cog gear, malleable iron adjustable base for end of barrel. It is built to withstand the destructive acids, lime and other spray materials which cause the ordinary sprayers to fail in the fight. It has a patent brass cylinder plunger and ball valves, making it almost indestructible. The handle is wrought steel with cog gear, to enable the operator to maintain a pressure of 200 lbs. or more, if necessary, with very little effort. It can be attached in a few minutes to any barrel. The O. K. Spray Pump is one of the most formidable weapons in the warfare against all insects and pests of every kind.

Price, as illustrated, without barrel, including two 15-ft. lengths of hose, two stop cocks and two nozzles, complete, ready to use. \$17.00  
8 ft. Extension Pipes, 60 cents each.

### Green's Cog Gear Barrel Spray Pump No. 18 For Small Orchards

It has bronze ball valves and brass seats; the plunger is brass fitted with hemp packing. Will handle hot, cold or any caustic mixture. The cylinder and discharge pipe are all brass. The air chamber is 32 inches in length, enabling the pump to throw a uniform, constant and elastic spray. It has good leverage, is very powerful and easily operated. The Mechanical Agitator stirs the solution from the bottom, making it impossible for this pump to clog under any circumstances. This pump can be used on any barrel.

The best pump on earth for the price. Price as illustrated, including mechanical agitator, 15 ft. hose and nozzle, ready for use \$8.80



### GREEN'S GRAFTING TOOL



A complete tool for grafting, made in one piece of forged steel. Price, Postpaid, 75c.

### GRAFTING WAX

1 lb. postpaid, 45c. ½ lb. postpaid, 30c.

NOTICE—We handle a complete line of Power Sprayers and Spray Solutions. Send at once for circular and get a complete spray calendar free.

Address GREEN'S NURSERY CO., Service Dept., ROCHESTER, N. Y.

### BUCKET OR BARREL SPRAY PUMP

#### TWO PUMPS IN ONE

It has all the advantages of the ordinary barrel pump and bucket pump combined. Has one-half more air chamber than any other make of bucket pump. Is made of brass with ball valves; handles and foot rest are malleable iron.

When used as a barrel pump, detach the foot rest and attach pump to top of barrel.

Price No. 24 complete, ready to use with agitator, 5 feet of 3-ply hose and graduating Vernorel, fine or coarse spray, and solid stream nozzle... \$4.45 With 4' extension pipe for higher trees... \$4.75





### THE YOUTH'S COMPANION

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### GREEN'S FRUIT GROWER

What is a publication like Green's Fruit Grower worth to you each year? Our readers tell us that it is the best monthly magazine that comes to their homes.

### SPECIAL COMBINATION PRICE

The Youth's Companion one year and Green's Fruit Grower one year for \$2.10.

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### AGENTS—\$30 a Week



Triple-Air Mantle Lamp. Generates gas from ordinary coal-oil, heating mantle to a powerful incandescence. Produces a whiter, brighter light than gas or electricity. Our patented generator does it all. Every demonstration means a sale. Price within reach of all. Enormous profits to agents. Write quick for territory and 15-day free trial offer.

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9770 West St. Dayton, Ohio

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Please mention Green's Fruit Grower.

### Apple Trees

Deal with us—the growers—direct. You save one-half. —get better trees. GUARANTEED true to name. Catalog free. The Crest Nursery, Piqua, Ohio. R.6.

Will Pay Reliable Man or Woman \$12.50 100 FREE pkgs. Perfumed Borax Soap Powder among friends. No money required. E. Ward Company, 222 Institute Pl., Chicago.

### New Peach

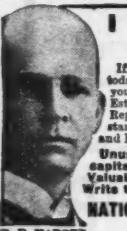
The Marion Hayward has been described, tested and painted by U. S. Dept. of Agriculture. Ripens August 15th, September 8th, Central States. Spring deliveries now. Dynamiting for orchards. Send for literature. Marion Hayward Orchard, 408 Walnut St., Cincinnati, Ohio

### FLORIDA

land values going up fast. Will sell a few farms out of our tract in Peace River region at low price on easiest terms. We are planting large groves, help wanted. F. O. Farwell & Sons, 52 Fenelon Place, Dubuque, Iowa.

### ROSES

Guaranteed to grow and bloom. Highest quality. Low prices. Send today for 42 page catalog. "Best Roses for America" with colored plates and cultural directions. Free THE CONARD & JONES CO. Box C WEST GROVE, PA.



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STUART'S PLAPAO-PADS are different from the truss, being medicine applicators made self-adhesive purposely to hold the flabby muscles securely in place. No straps, buckles or spring attached—cannot slip, so cannot chafe or press against the pubic bone. Thousands have successfully treated themselves at home without hindrance from work—most obstinate cases conquered.

Soft as velvet—easy to apply— inexpensive. Awarded Gold Medal and Grand Prix. Process of recovery is natural, so afterwards no further use for trusses. We serve it by sending Trial of Plapao absolutely FREE. Write us TODAY. Address, Plapao Laboratories, Block 1115, St. Louis, Mo.

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### February.

Old February's not so good  
As other months we know;  
For skies o'erhead are often gray,  
And mournful winds do blow.  
But if the months did seem the same,  
We soon would all complain;  
And nought would come to show the worth  
Of seasons that do bless the earth,  
And nothing would we gain.

Albert E. Vassar.

### Farm Land Drainage.

Written for Green's Fruit Grower by  
F. H. Sweet, Va.

The present high price of all farm products and the growing demand for them, is a cause for increased interest in farm drainage, as by this means vast areas of low swampy land, hitherto worthless for farming purposes, may be added to our tillable lands.

Now there are in general three conditions of soil needing drainage: first, land which is wet and marshy because of a lack of surface drainage; second, that which has so large an amount of organic matter and such heavy clay that water cannot well penetrate it; third, soils with heavy, compact clay subsoils and hardpans. If the plants growing are chiefly sedges and water-loving plants this will indicate the need of drainage.

There are two methods of drainage, namely, drainage by open ditches, and under drainage. The last named is by far the most effective and the cheapest in the long run. Certain conditions, however, make it expedient to use surface drainage or open ditches.

In some sections surface drainage is practised by plowing the soil into lands from twenty to forty feet wide with a dead furrow on each side, these dead furrows opening into a ditch on the side of the field which forms the outlet. In this way the surface water can be removed from a

Where the ditch is not opened with a plow, a square-bladed spade is the best tool to use. Further down a narrow tile spade should be used, which will leave a trench large enough for the tile without the removal of any unnecessary dirt. In very tenacious clay, an ordinary open spade will be found useful. The bottom of the trench should be finished and cleaned with the trench cleaner, leaving it of the same curvature as the outside of the tile.

Except in tough peat swamps, it has been found by experience that it does not pay to construct ditches with vertical sides, as these soon fall in and obstruct the flow of water. In clay soils and very stiff loams, the slope of the sides may be one to one, that is, the depth one unit and the distance from middle to sides one unit. In loose soils, the slope should be two to one. The grade of small ditches may be as low as six or eight inches per mile, but in loose soils, where a large amount of sediment is carried by the streams, from three to four feet per mile are required to make them self-scouring. The deeper the water flowing in a stream the greater the velocity and hence the greater the carrying power.

In excavating ditches, the dirt should be thrown so far back that when the work is completed, the distance from the edge of the material thrown out to the edge of the ditch is equal to the depth of the ditch, otherwise the weight of this material on the edge of the ditch will cause the soil to slide into it.

The distance apart of drains depends chiefly upon the nature of the soil and the depth of the drains. Drains should be sufficiently close together to remove the surplus water and lower the water table midway between them. Water flows much more freely through coarse, sandy

In draining potholes, it is often necessary to place the tile 5 to 6 feet deep at the neck in order to secure sufficient fall to remove the water from the lowest places.

In clay loams and soils where laterals are less than 100 feet apart, 3-inch tile are usually sufficiently large to carry the water, provided the slope is not less than 1-10 foot per 100 feet. Where laterals are more than 100 feet apart, it is best to use 4-inch tile. Large tiles are often laid with less slope, in some cases even level for short distances. It would probably be unwise to lay 3-inch tile at less slope than stated above. The carrying capacity of tile of any size varies directly with the slope. In laterals exceptionally long the lower end may be laid with 4-inch tile.

The size of mains depends upon the size and character of the area drained and the rainfall. It is necessary to provide capacity to remove all water falling at any one time, within twenty-four hours of its appearance.

The capacity of tile for carrying water may be computed very accurately, but the modifying conditions, such as amount of rainfall, openness of soil and its storage capacity, surface drainage of land, will of course vary.

Cylindrical tile have proved more suitable, all things considered. They are manufactured with inside diameters ranging from 3 to 30 inches in sections a foot long. They may be made from any good brick clay, but every part should be well burned.

Porosity is not an important matter, as practically all water enters at the joints. Or glazed and vitrified tile can be used. These are of advantage where there is frost, as their walls contain no moisture to expand. The use of vitrified tile will probably increase as cheaper methods of manufacturing them are introduced. Cement tiles have more recently come into use, and have proven very satisfactory. It is important to see that the ends of the tile are cut off square, so that they may fit together closely.

Tile once well laid should last indefinitely. In fact, the action of tile should improve as time lapses, as the openings in the soil leading to the tile become more numerous and lead more directly to it.

The presence of trees near the line of tile may sometimes be broken, but the break can easily be located by the standing water and the break may thus be repaired. It is usually of great advantage to ascertain the general slope, topography and the nature of the soil and the subsoil of the area to be drained, in order to determine more accurately the location, depth and disposition of the mains and laterals. In draining lands with marked depressions this survey may be omitted or taken only in part.

The elevations in surveying are usually taken at distances of 100 feet. By placing the elevations on a drawing made to a scale and connecting the points having similar elevation, these connecting lines will indicate by their directions the elevation and depression and consequently the most favorable locations for mains and laterals. Notations concerning the soil and subsoil may also be entered on this map, and thus form a valuable permanent record.

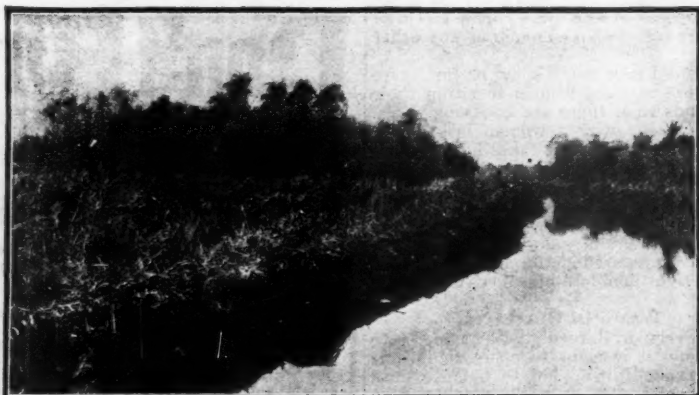
The natural depressions of an area may also be determined by studying the flow of water during a freshet. Some mark these depressions by a wagon track or stakes during the flow of water following a heavy rain. By whatever method the topography of the land is determined, the mains and submains should be placed in the lowest depressions, with laterals running to them in positions determined by the system adopted and the conditions incident to each individual area.

When the loss of the liquids from a herd of fifty cows is figured at its true value, it will represent a sum that will pay the wages and board of a man to attend the stables, haul the manure to the fields and leave a handsome margin, besides the advantage of having the job of hauling the manure out of the way before the hurry of the spring work comes on.

Where there are a large number of cattle and horses kept on a farm, a good manner of handling the liquid is to run it through a drain to a reservoir, where it can be stored until needed. As vegetation starts in the spring, the man who has the liquid manure at his disposal, has something with which he can stimulate the growth of grasses and clovers, and thus insure a heavy growth and an abundant crop. Then, too, after harvest the young clover in the newly seeded fields can be carried over the season of drouth, and a vigorous growth of plant roots encouraged which will make the crops a success where, without the stimulus, failure would have been almost certain.

November 6, 1913.

Green's Fruit Grower Co.—Received November Fruit Grower today and it's a dandy.—G. W. Ellithorpe, Angola, Ind.

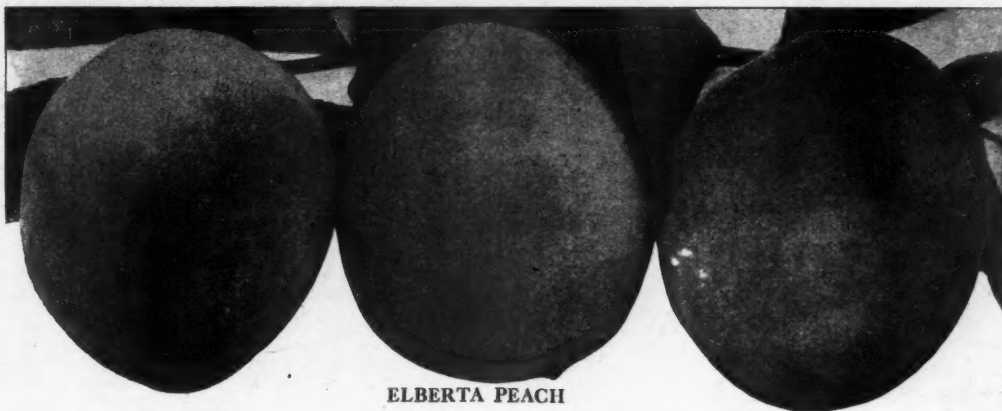


Draining a Big Swamp in Western New York.



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